ABSTRACT

TOWARD A MORE COMPLEX MODEL OF GROUP COHESION:
THE INTERACTIVE EFFECTS OF SUCCESS-FAILURE,
PARTICIPATION OPPORTUNITY, INTRINSIC
INTEREST AND PAY CONDITION

By

Alonzo Benjamin Anderson

To explore the complex nature of cohesion in task-oriented groups, the present research investigated the potential interactive effects of five variables: success-failure, pay condition, intrinsic rewards, participation opportunity, and role. Subjects were selected who were likely to derive either high or low intrinsic rewards from performing the experimental task, a game of twenty questions. Two hundred and forty subjects were assigned to 80, three-person groups; 40 groups had members who had expressed little interest in the task, and 40 groups had members who had expressed high interest. In addition, one member of each group was randomly selected to serve as leader. Groups later were randomly assigned to the remaining experimental conditions. This procedure yielded a factorial design whose dimensions were 2 (success-failure) x 2 (pay condition) x 2 (intrinsic rewards) x 2 (participation opportunity) x 2 (role within the group).

Three dependent measures were employed in the study to test the effects of the independent variables on the cohesiveness of

task-oriented groups: 1) a behavioral measure of cohesion; 2) a behavioral measure of task satisfaction; and 3) a questionnaire designed to measure subjects' perception of various dimensions of group functioning.

In general, the results of the study suggest that the level of cohesiveness of task-oriented groups is a function of a complicated and extensive set of variables. Specifically, the results obtained suggest that success-failure and participation opportunity may be considered as primary antecedents of cohesion in the group setting examined in the present research, since very strong main effects on these variables were obtained. On the other hand, it seems that intrinsic rewards and pay condition may be considered as secondary determinants of cohesion since they only had effects in interaction with the other variables examined in the study.

In addition, at the subjective perception level, the significant four-way interaction involving intrinsic rewards, pay condition, success-failure and role, indicated that the conditions of intrinsic rewards modified the relationship between pay condition and cohesion for leaders but not for followers. Furthermore, results indicated that the effects of participation opportunity on cohesion were modified by the level of intrinsic rewards a group member received. Moreover, an unexpected finding indicated that success-failure modified the effects of participation opportunity on group cohesion.

Thus, as predicted, the findings suggested that group process variables such as cohesiveness are a product of an extensive set of variables whose complicated interrelationships are just beginning to become understood.

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CHAPTER I

AN INTRODUCTION TO THE PROBLEM

Background

A substantial portion of the research on small group dynamics has focused on understanding the nature of the bond that holds the group together. It can be observed that some groups are composed of people who are very concerned with their membership in that they are strongly motivated to contribute to the group's welfare, to advance its objectives and to participate in its activities. The concept of cohesiveness has been developed to describe in a more technical and precise way the extent to which members of a group possess these concerns. The conceptual definition of group cohesiveness employed by most researchers in the field is the one advanced by Festinger, Schachter and Back (1950), who stated that group cohesiveness is "the resultant of all the forces acting on members to remain in the group." These forces are generated by certain characteristics of the members and by certain properties of the group which act jointly to determine the level of group cohesiveness.

As a result of the extensive attention focused on this phenomenon, there now is available a considerable amount of information regarding the impact of cohesion on other dimensions of group

process. For example, cohesion has been found to be related to both the quantity and quality of group interaction in a variety of studies (e.g. French, 1941; Back, 1950; Lott & Lott, 1961; Shaw & Shaw, 1962). Members of high cohesive groups are cooperative, friendly and generally behave in ways designed to promote group integration, whereas low cohesive group members behave more independently, and manifest little concern for others in the group. Furthermore, groups characterized by high cohesiveness exert a strong influence upon members to behave in accordance with group expectations (e.g. Festinger et al., 1950; Back, 1950; Schachter et al., 1951; Wyer, 1966). It also has been demonstrated that members of highly cohesive groups work harder to achieve the goals of the group (e.g. Goodacre, 1951; Van Zelst, 1962a; 1962b; Seashore & Seashore, 1954). Finally, evidence indicates that members of cohesive groups are generally better satisfied with the group than are members of non-cohesive groups (e.g. Van Zelst, 1952b; Marquise et al., 1951; Gross, 1954; Exline, 1957). Thus, the program of research which these studies represent has contributed significantly to our understanding of the positive effects of cohesion in groups. However, comparable evidence, which bears on the question of how cohesion develops in groups, has yet to be produced.

Upon closer examination of the literature on group cohesiveness there seems to be at least two reasons why social psychology has not provided a reasonably clear answer to the question of how cohesion develops in groups. One major reason is that the debate among

researchers in the area over what are the most useful conceptual and operational definitions of group cohesion has largely been closed.[1] Most researchers in the area now focus on interpersonal attraction as the primary means of measuring and manipulating group cohesion. The popularity of this position was generated by Lott and Lott (1964), who advanced a compelling argument that group cohesion is "that group property which is inferred from the number of strength of mutual positive attitudes among the members of a group."[2] This article has provided the direction for most research on group cohesiveness over the last ten years. However, there is reason to believe that Lott and Lott, by attempting to provide a direction for the field, helped bring the debate to premature closure.

In support of this point, a recent study reported by Anderson (1974) suggests that the distinction between socioemotional and task-oriented groups is crucial to both the understanding of group cohesiveness and the validity of Lott and Lott's position. This research examined possible differential effects of value similarity and goal-path clarity on the cohesiveness of small task-oriented groups. Triads, whose members were either high or low in value similarity, were tested in two separate experimental sessions. The first session asked subjects to get to know each other in a discussion group

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[1]Good example of this debate can be found in Gross & Martin, 1952; Schachter, 1952; Sagi et al., 1955; Van Bergen & Koekebakker, 1959; Eisman, 1959; Gruen, 1964.

[2]An integral part of their argument was the careful documentation of their position with several empirical studies and theoretical models which tended to support the interpersonal liking point of view.

situation. The second sessions presented a specific task that permitted the manipulation of goal-path clarity. The results indicated that in the first session, reported interpersonal attraction was a function of value similarity and that cohesion varied as a function of level of interpersonal attraction. That is, those group members who were high on interpersonal attraction indicated a significantly stronger desire to work with the same group again than did those low on interpersonal attraction. In the second session, only goal-path clarity (i.e., not interpersonal attraction) affected cohesion. This study tends to indicate that the Lott and Lott position is only applicable in friendship groups and does not apply in task-oriented groups where situational variables seem to be of some importance.

The second reason why social psychology does not have a good answer to the question of the development of cohesion in groups is that this phenomenon appears to be the product of a complicated and extensive set of variables. For example, there is reason to believe that some of the consequences of cohesion also serve as determinants. To illustrate this point consider that cohesion tends to generate frequent interaction among members, which, under certain conditions at least, heightens interpersonal attraction and thus increases cohesiveness. On the other hand, group cohesion also can develop a degenerating pattern. Here a reduction in cohesion produces consequences that then lead to a further decrease in cohesiveness. Thus, for example, if a group fails to reach an important goal, the group may become less cohesive, and the resulting decline in cohesion, in

turn, may reduce the group's ability to succeed in the future, thereby further diminishing cohesiveness.

It is also possible of course, for the pattern to develop as a more complex form, for example, when an increase in cohesiveness has consequences that lead to a subsequent decrease in cohesion. In this case cohesiveness would fluctuate around a particular level. An instance of this sort may arise when the additional power derived from an increase in group cohesiveness is used to induce members to engage in activities that are frustrating or otherwise negative, which, in turn, reduce the incentive value of the group.

Certainly these considerations are speculative, but they do serve to make the point that there is a lack of empirical evidence either to support or to refute them. Thus, to a large extent, our knowledge of the determinants of group cohesion is also speculative. Therefore, if social psychology is to evolve a clearer understanding of this phenomenon and provide an answer to the question of how cohesion develops in groups, it is apparent that it should be studied as a dependent variable. To accomplish this end, it seems appropriate to define a psychological group and to define cohesion, both conceptually and operationally. The definitions of group and cohesion presented below draw heavily from the existing treatments of these concepts, so it seems useful to review first some of the more relevant conceptualizations of them.

The Concepts of Group and Group Cohesion

Perhaps the earliest definition of cohesion grew out of the sociometric orientation toward group process. Moreno and Jennings (1945), Bronfenbrenner (1945) and Criswell (1947) defined the group as well as its property of cohesion in terms of the reciprocation of sociometric choices. For these authors group cohesion is high when a great number of the members of a group are bound together by a network of mutual choices.

Several contemporary authors, however, consider the group as an instrument for achieving individual goals or needs. The basic promise of this instrumental orientation is that individuals will act according to their perceptions of the consequences of their acts, which in the main will be self-serving. For instance, Cartwright and Zander (1960) provide an example of the instrumentalist position which has elaborated on the Festinger et al. (1950) definition. This position posits that the "forces" of cohesion are consequences of the interaction of the group members' need states and the extent to which the members perceive the group as a source of pertinent need satisfaction. Another example is the theoretical work of Bass (1960) who considers the group to be a rewarding collection of people. Two of his major variables are effectiveness (i.e., how rewarding group membership is to the individual) and attractiveness (i.e., the extent to which the members perceive rewards as coming from the group).

Homans (1961) who also advocates an instrumental approach to group dynamics, perceives group behavior as a class of variables

which are a function of a stimulus-response-reward sequence. The framework is a social situation in which interaction is thought of as individual A's activity stimulating individual B's activity. If individual B's activity is rewarded, there will be a greater probability for its occurring again in the presence of similar stimuli; if the activity is negatively reinforced, the probability of its recurring is reduced. Finally, within the instrumental perspective, there is a point of cessation at which the rewards are no longer worth the cost of performing the activity. At this point Homans invokes the language of economics and talks about profits, or net rewards. Behavior will depend upon one's expectations of total net profit or, in Homans terminology, the extent to which rewards and costs are perceived as being distributed justly. Thus if individual A and B perceive mutual benefits as the net result of a particular type of interaction, they will behave accordingly. Thibaut and Kelley (1959) use a similar theoretical approach in which attraction to the group is a function of rewards received and costs incurred vis-a-vis others.

Thus, four similar positions, each describing a social behavior in terms of rewards and costs, with expectations about outcomes as a central variable, have evolved out of the instrumentalist orientation. However, the most influential proposal continues to be the Festinger et al. (1950) definition mentioned earlier, which maintains that a group is low in cohesiveness when the induction of forces upon the members to remain in the group are not strong enough to counteract the forces bearing upon the members to leave the group.

The conception of the group and its property of cohesion to be employed in the present research certainly recognizes the importance of the instrumental position, but, at the same time, it assumes that behavior in groups cannot be understood solely in terms of the self-serving instrumentality of group membership. Rather, it is suggested that a group is a social system in which group properties, individual needs, and external environmental demands are interrelated in various processes. Thus the instrumentalist orientation seems too narrow in its treatment of cohesion because it ignores situational variables--which almost certainly mediate the effects of individual variables on group cohesion. Therefore, group properties and external environmental demands should also be important to a group's cohesion, a conclusion which receives some support from the results of the Anderson (1974) study. Thus, a broader, more inclusive approach to the group and its cohesion is suggested, a perspective that views the group as an open system.[3]

The open systems model is suggested because it basically is concerned with problems of relationships, of structure, and of interdependence rather than with the constant attributes of its parts--in this case the group members. Conceptually, a system refers to a collection of interrelated processes or events encompassed by a

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[3]It is customary to distinguish between open and closed systems, the latter being those which are isolated from their environment and studied primarily by classical physics and chemistry. Open systems interact with their environment. The human group may be viewed as such an open system because it maintains itself by a continuous interchange with the environment

recognizable boundary[4] within which the behavior of any part is strongly influenced by the behavior of other parts. Therefore, it would seem that a piece-by-piece examination of a system is not likely to be entirely fruitful, when together the pieces behave differently than when apart. The capabilities of a system seem to depend upon the distribution of characteristics among the parts, and the system survives as a consequence of coaction rather than individual action. In this view, the whole is not the sum of its parts, but rather the relationship among its parts. Therefore, to the extent that a group functions as a system, wholly individualistic approaches to the explanation of the group can never be completely satisfactory.

The Group as a System

Several lines of evidence suggest that groups legitimately may be regarded as systems. When participating in groups, individuals often behave quite differently than when alone. Personality measures, for example, generally are poor predictors of how people

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[4]Berrian (1968) has suggested that the boundary of a human group is defined by the nature of the communications and interactions. Communications and interactions within the boundary are different in quality and/or frequency than across the boundary. Communication within the group are more intimate, more frequent, or more confidential than communication across the boundary. Other criteria of group boundaries have been suggested by Sherif & Sherif (1956). According to these authors and others, a group possesses (a) some differentiation within role structure, (b) a set of valued norms regulating members' interaction, and (c) exist over a time span at least sufficient to establish (a) and (b).

will behave in groups, and there is good reason to believe that the actions of individuals are shaped by the interdependencies that prevail in groups. Finally, analysis of collective action reveals the systematic patterning of members' behavior.

Social influence.--Early studies of real-life groups (Durkheim, 1938; LeBon, 1914) revealed that mob behavior is dramatically different from the behaviors individuals are prone to produce when acting alone, and studies of social influence across a wide range of activities have disclosed striking effects. Thus, for example, Asch (1951) has demonstrated that many people support the judgments expressed by their associates even when those judgments are blatantly inconsistent with sense data. Milgram (1963) found that, when urged to do so, well meaning adults administered "painful electric shocks" to an experimental accomplice who pleaded inability to bear further anguish. Lewin (1953) showed that individuals whose attitudes are highly resistant to individual appeals are sometimes susceptible to group persuasion, and Orne and Evans (1965) noted that a long series of experiments had failed to identify any task so onerous that college students would refuse to perform it when asked to do so by an experimenter.

Another line of evidence involves the data of many studies designed to identify personality variables that predict how individuals will behave in groups. A Harvard report (Solomon and Lemann, 1951) on five years of investigation concluded that "such research has had little success because members of a group constitute a

system." Mann (1959) examined several hundred studies published between 1900 and 1957. The correlations obtained between specific personality variables and behavior in a group varied greatly from one study to another, but in no case was the median correlation for a relationship higher than .25. When a person functions as a member of a group, his behavioral predispositions are likely to be less critical than the demands of the social system. Thus, the group itself, or the situation in which the group finds itself, may greatly influence which needs, predispositions, values, etc., the individual will use as a basis for his behavior in and interpretation of the group. This perspective is relevant to the understanding of cohesion since it posits that the relationship between members of a group to some extent will be a function of situational demands; and in task-oriented groups, most, if not all, situational demands will be related to task performance and completion.

Norms and roles.--In order to minimize conflict and disorder and to promote the welfare of the group, members of groups tend to reach implicit or explicit agreements about rights and obligations. Normative perceptions apply equally to everyone who encounters a given type of situation; norms specify what must, or must not, be done when. Roles are more complex in that they entail different sets of rules for different categories of people; a role system specifies who must, or must not, do what, when. Etiquette books and army manuals, for example, describe norms and roles that are alleged to govern behaviors in certain situations.

Norms and roles are convenient mechanisms for ensuring the stability of the group. Roles, because they almost invariably require individuals to produce behaviors that are geared to those of associates, give the group one of the qualities of a system. Participants are rewarded for reacting to one another in ways that have seemed in the past to promote collective achievement and to minimize interpersonal discord.

Shared fate and functional interdependence.--These are ubiquitous phenomena. Although they are more typical of some aggregations than others, they are almost universal concomitants of prolonged social interchange. Deutsch (1949) suggests that promotive interdependence is the critical criterion by which a sociological group can be identified, while Cattell (1951) contends that ". . . a group is a collection of organisms in which the existence of all is necessary to the satisfaction of certain individual needs of each." The former view emphasizes shared fate, whereas the latter stresses functional interdependence. Both views imply that groups have the quality of a system.

The Concept of Group Cohesion

On the basis of the preceding discussion, a group may be defined as an open interaction system of two or more individuals who come together so that the system performs some function. With this definition, however, it is important to recognize that interdependence,

need satisfaction, differentiation of structure and organization may be inevitable consequences of group process. Thus, interaction is the key to understanding and defining a group because it is out of this interaction that all other discernible characteristics of a group evolves. With this conceptualization of the group, cohesion may be viewed as a complex group phenomenon which evolves out of the groups process. In this sense a certain state of interdependence between members constitutes a given level of group cohesion.

As for the most appropriate conceptual definition of cohesion, it is believed that for the time being Festinger's definition (Festinger et al., 1950) remains a useful one, although it can be argued that it is not a complete definition, but, rather, a direction to a definition. This may be true, but this weakness is also the strength of Festinger's conceptualization; that is, it is general enough to stimulate further exploratory research, yet specific enough to give boundaries to the concept of cohesion. The job of researchers interested in this concept is to speculate, develop testable hypotheses, and let the more specific final definition evolve out of a systematic investigation of group cohesiveness as a dependent variable. The specific operational definition of cohesion to be employed in this study is "the ability of groups to foster sufficiently strong bonds among all its members to enable them to interact, resisting forces that would disrupt such relationships." With this definition attention is directed toward a consideration of variables and conditions which hold a group together while

de-emphasizing what attracts the members of a group to one another. The specific measures of this operational definition are discussed in a later chapter.

The Study

This present study was concerned with task-oriented groups, and, within this context, its primary focus was on situational variables.[5] The goal of the research was to move closer to an understanding of how cohesion develops in groups. Considering that cohesion does seem to be such a complex group phenomena, it is necessary to build a more complex model of it that should more clearly explain its nature. To this end it seems necessary to investigate the combined impact of important variables on group cohesion.

Several variables have been demonstrated to have an independent effect in determining cohesion in groups. A partial listing of some of the more important variables would include: anxiety level (Schachter, 1959), need satisfaction (Ross & Zander, 1957), group size (Porter & Lawler, 1965), interpersonal attraction (Lott & Lott,

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[5]It could be argued that structural variables more accurately refer to the class of variables of interest. However, this concept is more restrictive in its meaning than the author intends. Situational variables refer to a broader class of variables and can be conceived of as constituting boundary conditions for the relationships in groups and are external to it. These are variables which are external to the relationship between group members (e.g. formal structure) as opposed to being basic to it, such as all varieties of similarity (e.g. similar needs, values, background, etc.).

1964), group atmosphere (Dittes, 1959), communication structure (Bavelas, 1950), type of interdependence (Deutsch, 1949), type of leadership (Lewin, Lippitt & White, 1939), group goals (Anderson, 1974), success (Shelly, 1954), and participation (Coch & French, 1948). Two other variables which have not received research attention but seem to hold some promise for understanding group cohesion is suggested by the work of Deci (1971). The two variables are level of intrinsic and extrinsic rewards received from membership.

Within the conceptual framework of the open systems model it seemed that participation, success, and reward source are likely to operate jointly in determining group cohesion, and, thus, a reasonable first step toward building a more complex model would be to examine them together. The purpose of the literature review which is presented below is to examine the relationship of each of these variables to group cohesion and to present the theoretical basis from which the specific hypothesis tested were developed. Thus, the review considers the separate and joint relationships between group cohesion and degree of participation opportunity, and intrinsic and extrinsic sources of reward.

As discussed above the open systems model is a very rich conceptual tool and it is used as such in the present study. However, it is the very richness of the model itself which prevents a reasonable test of it. Therefore, the present research had a more narrow focus, namely, the potential effect of individual needs and situational variables on cohesion within the framework of group behavior

as social exchange. Evidence that these two theoretical perspectives are compatible is provided by the work of Homans, whose earlier (1950) theoretical statement was within the framework of open systems theory, which he narrowed to the theory of social exchange in later theoretical work (1961).

Therefore, the general theoretical framework employed in the review is Thibaut and Kelley's (1959) exchange theory. This perspective asserts that once the initial contact is made between a group of two or more individuals, the formation and survival of the relationship depend upon the levels of outcomes the individuals experience or expect to experience. Although the outcomes of interaction may be described in many ways, Thibaut and Kelley chose to consider the rewards and costs that accrue to the individual as a consequence of his having participated in an interaction. Rewards are the satisfactions and gratifications that a person receives from having participated in a given interaction with another. Costs are those factors that serve to inhibit the performance of a given behavior sequence. They are negative consequences of emitting a sequence of behavior in an interactive context. Thus, the outcome of any interaction is considered to be a resultant of the rewards received and costs incurred. The major analytic technique used by Thibaut and Kelley is the outcome matrix. The outcome matrix is formed by noting all the behaviors that individuals might jointly perform. Each cell of the matrix contains one item of each individual's repertoire.

Thibaut and Kelley also note that none of the participants in a group are initially aware of the outcomes he might attain by interacting with the others. Thus, at the outset of the interaction, each member samples the outcomes available to him in the target interaction. They will sustain the interaction after this sampling period only if the experienced or inferred outcomes are sufficient to warrant continued interaction. The adequacy of experienced or inferred outcomes is evaluated on two criteria: 1) the comparison level (CL) and 2) the comparison level for alternatives (CL alt.). The first of these is the standard by which an individual evaluates the attractiveness of a relationship; the second is the standard by which an individual decides whether or not he will remain in a relationship. These two criteria are separate ones because, for example, an individual may continue a relationship regarded as unattractive if it is the best available to him at the time.

The CL is the minimum level of positive outcome which an individual feels he deserves from any relationship. The CL can be represented as the neutral point on a continuum ranging from dissatisfaction to satisfaction. If the outcomes of a given relationship exceed this hypothetical neutral point, the relationship will probably be regarded as attractive and satisfactory. If these outcomes fall below this neutral point, the relationship will probably be considered to be unsatisfactory and unattractive. The CL is defined "as being some model or average value of all the outcomes known to the person (by virtue of personal or vicarious experience),

each outcome weighted by its salience (or the degree to which it is instigated for the person at the moment)" (Thibaut & Kelley, 1959, p. 81). It is apparent then that the CL is subject to situational as well as moment-to-moment changes. That is, it should vary as the individual experiences or observes new outcomes which change the hypothetical average or model value of outcomes. The CL should also change as situational factors alter the salience of certain outcomes. Thus, the major determinants of CL are one's past experience with outcomes in social relationships and the momentary and general salience of certain outcomes.

Thibaut and Kelley defined CL alt. as "the lowest level of outcomes a member will accept in light of available alternative opportunities" (Thibaut & Kelley, 1959, p. 21). The alternative relationship used as a standard to compare a perspective relationship to is generally the member's best available alternative. For a group to be formed and survive the jointly experienced outcomes must exceed each member's CL alt. If the projected or experienced outcomes of a relationship are not competitive with the outcomes possibly available in other alternative relationships, then the present relationship will generally proceed no further. If, however, the outcomes fall well above the CL alt., the relationship should persist and the individuals involved will then attempt to forecast trends to determine whether or not these positive outcomes will remain stable across time.

Thus, it should be clear that in the context of Thibaut and Kelley's exchange theory, a person will be more "attached" to a group the more the level of his achieved outcomes exceed his comparison level and comparison level of alternatives.

Success as an Antecedent of Group Cohesiveness

In a task-oriented group the level of outcomes that a member aspires to receive from membership would seem to be related to successful task performance. In the context of exchange theory it can be postulated that an important basis for group cohesiveness would be the extent to which the group fulfills successfully its primary mission of performing its task. Support for this position can be obtained from several studies which, in general, are quite consistent in their findings. Success compared to failure leads to more positive attitudes towards the other members of the group (i.e. increased interpersonal attraction, increased mutual esteem), more positive attitudes toward the group (i.e. increased pride, increased membership motivation), more positive attitudes towards the task, and more positive attitudes toward performance. These findings appear to hold true across different groups performing a variety of different tasks.

Typically, data concerned with this variable have been obtained from experiments in which the success or failure of small groups, working on a single task or series of problems, has been

manipulated. Utilizing such a design, Shelly (1958) found that members of successful groups had a more favorable attitude toward their group than did members of groups who experienced failure. Steiner and Dodge (1956), in effect, manipulated success and failure by interfering, in one condition, with messages sent by group members to one another via lights and buttons. In this condition ("perceptual inaccuracy") incorrect messages were received, while in another condition there was no interference and hence "accuracy." When no specific rules had been provided by the experimenter for members to follow in performing their task (design reproduction on a checkerboard), the former condition was significantly associated with less task efficiency, with more criticism of the group, and with greater rejection of own group members for a new task. Working with groups of second- and fourth-grade children, Heber and Heber (1957) gave some groups a high score on an arithmetic test, some a low score, and some no score and then measured changes in the mean ratings group members gave one another on a social distance scale. Under the low score condition, the ratings decreased; under the success or neutral condition, they increased, with the effect showing most permanence after success.

Both Deutsch (1959) and Zander, Stotland, and Wolf (1960) have reported data indicating a positive relationship between group success and the attractiveness of the group as a whole; in the latter investigation, however, responses to a scale measuring attraction to member of the group did not differentiate between subjects in failing

and successful groups. In Zander et al. (1960) success-failure was most critical for high unity groups (which was manipulated through instructions and seating position). Failing groups tried to remove the source of unity (i.e., change seating position) and minimize the importance of the group, its properties, and the failure experience (expended effort) significantly more than did successful groups. The findings of this study are particularly supportive of the position being presented here since they demonstrate that subjects may attempt to minimize group unity, minimize expended effort, and attempt to attribute responsibility to others--all signs of low cohesiveness--under conditions of failure.

Equivocal findings with respect to the general proposition that cohesion will be greater in successful groups than in unsuccessful groups have been reported by Kleiner (1960). In group situations where one member was clearly responsible for improving group performance (or, more accurately, decreasing the "likelihood of failure") there was no significant increase in subjects' ratings of the group. On the other hand, in the condition where there was only a small reduction in likelihood of failure, group members tended to significantly lower their evaluation of the group, apparently "holding each other responsible for the relatively small improvement." There have been other reports of negative findings as well. Thibaut (1950) found that groups of boys who tried to obtain better treatment from the experimenter and failed significantly increased in cohesiveness

(as measured by proportion of own group choices), while groups of boys who were successful in improving the status did not.

It seems clear that members of successful groups tend to have a more positive attitude toward the group than do members of unsuccessful ones. It is also true, however, that under certain conditions cohesion follows shared failure, especially where the failure is perceived as arbitrarily imposed by an external source. So, in the present study it was thought important to make the situation real in the sense of being sure that the subjects believed that success or failure was attributable to their own shared efforts and not to outside manipulation.

The Role of Participation Opportunity in Determining Group Cohesion

The term "participation opportunity" does not refer to a clearly defined scientific concept; rather it is a term with potentially many usages in our common language. Therefore, before moving into a discussion of its relationship to group cohesion it is necessary to provide a definition of the term as it is used in this context.

Participation opportunity refers to a process in which all members of a group have the opportunity to initiate interaction and/or influence each other in making certain plans, policies, and decisions which in any way relate to the group. For example, let the

participants in a decision-making process be denoted as A, B, C, . . ., where A may be a person, a group, or an organization. The amount of participation opportunity of A is defined as the amount of A's opportunity to initiate interaction and influence that B and C accepted during the joint decision-making process. The following elements of this definition should be noted: a) participation opportunity may be viewed from the standpoint of anyone of the members of the totality, and b) A's participation opportunity must be accepted by the other members. Furthermore, the meaning of participation opportunity should be limited to processes of free social interaction and voluntary social influence and should exclude the utilization of coercive power (see French and Raven, 1959).

Thus, participation is an individual behavior whereas participation opportunity is a structural characteristic of a group. It should be noted, however, that this study involved the manipulation of subjects' participation opportunity and, therefore, a simultaneous manipulation of his actual participation. In fact, then, the separate effects of participation and participation opportunity could not be measured, but for purposes of convenience, this composite manipulation is referred to simply as participation opportunity.

Finally, in order to clarify the concept of participation opportunity further, it should be noted that it also has reference to status differentials with associated implications for control of the situation. That is, participation opportunity can also be conceptualized in terms of this opportunity being restricted from below (a

strong subordinate), from across (peers) or from above (a strong leader).

Theoretically, exchange theory would predict that in groups with high participation opportunity cohesion would be significantly higher than in groups with low participation opportunity. But, perhaps the potential effects of varying degrees of participation opportunity on group cohesion may more clearly be seen from the perspective of Brehm's (1966) reactance theory. Briefly Brehm's theory assumes that if a person's behavioral freedom is reduced or threatened with reduction, he will become motivationally aroused. This arousal would then be directed against any further loss of freedom and it would also be directed toward the re-establishment of whatever freedom had already been lost or threatened. Clearly, from this perspective a restriction of a group member's participation opportunity would lead to intra-group hostility or a strong desire to leave the group. In either case group cohesion would be quite low.

Since the term "participation opportunity" is not in popular usage in social psychology there is not a clear and direct line of evidence suggesting its relationship to group cohesion. However, examination of related areas of investigation offer indirect evidence suggesting that participation opportunity may be a very important antecedent of group cohesion. The data examined generally come from the literature on participative decision-making and some of the leadership studies. A few examples from this literature should serve

to establish the relationship between participation opportunity and group cohesiveness.

The classical experiments by Lewin, Lippitt and White (1939) on styles of leadership provide several indications that children are more attracted to a group with democratic leadership (suggesting more participation opportunity) than to one with autocratic or laissez faire leadership. Research conducted in quite different settings leads to similar conclusions. A study comparing two styles of leadership, reported by Preston and Heintz (1949), showed that members of groups having participatory leaders (involved in group discussion), expressed more satisfaction with the group's product, felt the group's task to be more interesting, believed the group to be more efficient, and gave more weight to the attitudes of other members in forming their own opinions.

Additional evidence along this same line was reported by Bovard (1951), who was concerned with the effects of two contrasting group leadership techniques--group centered and leader centered--on interpersonal affect in small face-to-face groups. The major procedural differences between these two techniques was that member-to-member verbal interaction was fostered in the group centered process and severely curtailed in the leader-centered process. The hypothesis that members of the group-centered population would rate each other higher on an affect scale than members of the comparable leader-centered population was supported. However, an unexpected finding of this research appears even more important to the present study:

Bovard also found that in the group-centered units, the group-as-a-whole was rated appreciably higher, on the average, than were the individuals comprising the group, and the difference on this comparison between the two types of groups was significantly pronounced.

Further evidence supporting the relationship between participation opportunity and group cohesion was reported by Fleishman et al. (1955). This study was undertaken to determine whether the effects of "human relations" training for foremen were permanent, how they were influenced by the actual work situation in which a foreman operates, and the results such effects had on the overall efficiency of the industrial enterprise. In one phase of the study the researchers were concerned with the relationship between different types of leadership (i.e. consideration and initiating structure) and the variables of employee morale, general departmental efficiency, as well as other factors such as absenteeism, grievances and turnover. It was found, among other relationships, that the amount of absenteeism was smaller in groups which had more considerate foremen than in those which had foremen who favored initiating structure. That is, a significantly high negative correlation was found to exist between absenteeism and consideration. In another study Fleishman and Harris (1962) focused on two leadership techniques, consideration and initiating structure, and on two issues: a) the form of the relationship between leader behavior and indices of group behavior, and b) the interaction effects of different

combinations of consideration and structure. Relationships between foreman behavior and two indices of group behavior, labor grievances and employee turnover, were investigated. In general, low consideration and high structure were significantly correlated with high grievances and turnover.

Perhaps even clearer evidence can be obtained by examining literature on participation. One of the major proponents of participation is Likert (1961), who proposes an approach to management that is characterized by a number of variables, such as a high degree of cooperative team work, full involvement of subordinates in decision-making, and a complete merging of formal and informal organizations. There have been several tests of this theory, notably among which is one conducted by Seashore et al. (1955) that tested the prediction that departments or units whose structure and operations more nearly corresponded to the pattern called for by Likert's theory should achieve better results than units which had less similarity to the pattern. Data were collected in 31 geographically separate departments of a company which operates nationally. The data indicated, among other obtained relationships, that a high positive correlation existed between group loyalty and ease of communication upward, downward, and between peers. Furthermore, it was reported that those groups low on loyalty had substantial barriers to the upward communication of both ideas and complaints. A high positive correlation between "worthwhile" group meetings and ease of communication also was reported. Related findings were obtained by Morse (1953), who

concluded that a supportive attitude on the part of the superior, as well as the constructive use of group meetings, is necessary to develop group pride and loyalty.

Tannenbaum (1968) has developed an approach which views participation in terms of the desired end-product--a sense of exerting influence or control. His technique is to ask respondents to estimate the amount of control (from very great to little or none) exercised by various hierarchical levels within the organization. On the basis of responses to these questions "control graphs" are drawn. The typical graph indicates that top management exerts a great deal of control, with the degree of control declining as one moves lower in the hierarchy. Overall his findings suggest that the distribution of control (or relative participation) is less clearly related to organizational effectiveness than is total control--the sense that everyone has some influence within the organization. Effective organizations are those in which the subordinate feels that both he, himself, and his boss have a considerable measure of control.

Another study in the field setting provides further evidence of the relationship between participation opportunity and group cohesion. Coch and French (1948) conducted an experiment involving variations in group participation procedures in order to investigate relations between productivity and variables such as leadership principles, skills, and group loyalty. They used two variations on participation, with the first involving participation through representation of the workers in designing changes to be made in their

jobs. The second variation consisted of total direct participation by all members of the group in designing the changes. Two different experimental groups received this total participation treatment. A fourth group was used as a control and treated in the customary manner (i.e., management modified the job, including a higher production rate, and the workers were later informed of the change in a group meeting).

Coch and French found, in their different groups, changes in employee attitudes and reactions to supervision and management that corresponded to the changes which occurred in productivity. For the control group they found that resistance developed almost immediately after the change occurred. Marked expressions of aggression against management occurred, such as conflict with the methods engineer, expressions of hostility against the supervisor, deliberate restriction of production, and lack of cooperation with the supervisor. Most important in this context is that there were seventeen percent resignations in the first forty days. For the experimental groups it was reported that they worked well with their supervisors and method engineers, and no indications of aggression were observed from these groups. Furthermore, there were no resignations from any of these groups in the first forty days.

It is important to note that in both the direct and non-direct participation conditions there were no resignations in the first forty days. These results may be interpreted to mean that even if an individual does not directly participate, the knowledge that

he has the opportunity to do so is important in determining whether he will remain a member of the group or leave.

In another field study, Kahn and Tannenbaum (1957) predicted that participation in union activities would be related to the perceived leadership skills of the steward in (1) communicating to the men, (2) involving them in decision making, (3) providing help to the men, and (4) taking personal interest in how the men get along on the job. These relationships were tested in four local industrial unions in Southern Michigan, selected to differ with respect to the participation criterion. Data were collected by written questionnaire, with telephone and personal followup. Results were substantially as predicted, with the rank order of locals on the leadership dimensions corresponding closely to the ranking on the participation criterion.

Still another field experiment (Morse & Reimer, 1956) conducted in a large business organization employing female clerical workers provides further evidence. In two divisions decision-making among rank-and-file workers was increased while in another pair of divisions it was moved to higher levels of management. After one and one-half years, significant changes were found in employees' satisfaction with the company; an increase in satisfaction occurred among the employees in the divisions affording increased opportunities for decision-making while a decrease occurred among those in the other divisions. It should be noted, however, that additional analyses undertaken by Tannenbaum and Allport (1956) show that people

with different personality structures reacted to these two types of social organization in rather different ways. That is, workers whose personalities reflected a desire to participate (as opposed to a desire to be dependent) responded favorably to an increase in participation.

These findings have been supported by other researchers interested in the impact of participation on subordinates. Using measures of the extent to which nonsupervisory employees felt they participated in decisions related to their work, Vroom (1960c) found that this psychological participation was related both to attitudes toward the job and to performance. Further analyses revealed that workers who were more authoritarian responded less favorably to participation while those who had great "need for independence" reacted more favorably. French, Israel and Aas (1960) also report similar results from a study conducted in Norway. They demonstrated that the response of workers to participating in decisions related to their work was influenced significantly by whether the worker felt that the participation was "legitimate." French defined legitimacy of participation as the extent to which "it is considered right and proper by the parties involved." Workers who felt their participation in the decision in which they were involved was legitimate responded significantly more favorably to the experience than did workers who felt their participation was not legitimate.

The literature reported in this section, particularly that on participation, as it is reported, is all unidirectional (i.e., the

superior solicits responses from the subordinate). However, it seems reasonable to assume that if the superior makes it a practice to give subordinates the opportunity to become involved in plans, policies, and decisions relating to the group, that these subordinates will come to expect this opportunity and will on this basis feel free to volunteer information. To the extent that this is true a group can be characterized as having high participation opportunity and for this reason it can be expected that the group will exhibit a greater tendency to be cohesive.

Intrinsic Rewards as a Determinant of Group Cohesion

The relationship between intrinsic rewards and group cohesion is not one which has received a great deal of research attention, yet there is a strong possibility that this variable may be an important antecedent of group cohesion. The purpose of this section is to present theoretical and empirical evidence which suggests that this relationship deserves investigation. However, "intrinsic reward" has to be defined precisely before entering into a discussion of its possible impact on group cohesion.

Intrinsic reward refers to pleasurable or satisfying reinforcement which is directly connected to the performance of a particular activity.[6] Thus, an intrinsically rewarding task is one

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[6]Implicit in this definition is that the person will necessarily expect that involvement in the activity will yield desired

engaged in for its own sake in order to derive some inherent pleasure or satisfaction. The question now arises as to what might be the effect of an intrinsically rewarding task on group cohesion.

In the context of exchange theory it could be postulated that as long as a person was afforded the opportunity to be involved in a task he found to be intrinsically rewarding he would choose to remain in the group. However, the effect of intrinsic rewards on cohesion may not be as simple as this, because the person could choose to perform the same task in a different group. So if a person did choose to remain in the group, it would seem that more than the mere performance of the task is involved. A more complete understanding of the relationship may be derived from reinforcement-learning theory, and it is within this framework that this discussion takes place. Admittedly, this approach necessitates a digression from the focus on situational variables to a more general consideration of the instrumental nature of groups; however, this is a necessary procedure considering the variable of interest.

One starting point for the present discussion is the assumption that human beings tend to behave instrumentally, and that this goal-directed nature of behavior is characteristic of social, as well as of non-social, activities. One common and highly significant example of social behavior is, of course, the maintenance of membership in groups, and it can be expected that individuals will

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outcomes, so the concept of intrinsic reward is an expectancy variable as well as a motivational variable.

be attracted to a group when, within the context of the group, they have attained goals or experienced rewards.

It is important to note here that in the present discussion, the concept of attitude is used synonymously with cohesion for two reasons: 1) because the former has a precise and particular meaning within reinforcement learning theory (Doob, 1947), and 2) when individuals who comprise the membership of a given group manifest positive attitudes toward one another it can be expected that they also will resist forces disruptive to their relationship. It should be recalled that it is this property (the resistance to disruptive forces) which has been labeled group cohesion. So, the problem of how cohesiveness develops becomes, in light of this statement, the problem of how members of a group learn to respond to one another with positive attitudes. The conditions, within a group, under which such responses may be produced are suggested by the general principles presented below.

The primary condition for the development of mutual positive attitudes among group members appears to be the attainment of goals or the receipt of rewards in one another's presence. (1) When a response is rewarded in the presence of discriminable stimuli, the probability that these stimuli will evoke the rewarded response is increased (Hull, 1951). The association, in other words, between the response and all stimuli that were present at the time of reinforcement, is strengthened. (2) When an overt response, or sequence of responses, is followed by reward it is assumed that still another

response is made by the rewarded organism, namely a response to the reward itself (Spence, 1951). It is this goal response, or its implicit component, which can become anticipatory and move forward in a behavior sequence. Such a response can become anticipatory because of its close temporal association with the reward which results in its receiving the greatest increment in habit strength. The response thus can be expected to occur directly to the external stimulus, before its original time in the response series. It is the covert component of the goal response which is most likely to be evoked because there is less chance that it, in contrast to goal response, will conflict with any ongoing instrumental act (Hull, 1952).

Relating the two principles stated above leads to the proposition that goal responses, like any other responses, can become conditioned to stimuli which are consistently present during goal attainment. More specifically, it is expected that the implicit component of the goal response, which can become anticipatory to the originally rewarded behavior, will eventually be evoked by the previously neutral stimuli. It is this implicit component of the goal response which can be considered an attitudinal response in accord with the theoretical treatment of this concept by Doob (1947), who defined an attitude as a learned implicit anticipatory response having cue and drive properties.

It is to be expected, then, that any stimulus which has been consistently present during reinforcement can eventually evoke the

implicit and anticipatory component of the reaction to reinforcement, namely an attitudinal response. Thus, in situations where reward is frequently experienced in the presence of other people, such as the members of one's group, these other people, assuming they are discriminable, should gradually become able to evoke positive attitudes. In a group, therefore, where rewards or satisfactions have been frequent, each individual should develop a positive attitude toward every other member of the group who has been consistently present when goals have been achieved. To account for positive attitudes toward new group members, or toward other members not present during past experiences of reward, principles of generalization would need to be invoked.

A problem arises, in treating persons as stimuli, which merits attention at this point. Group members, as stimuli, have been treated in the above discussion as initially neutral with respect to their power to evoke positive attitudes. Clearly, however, we would not expect persons to be neutral stimuli in the absolute sense that they evoke no response whatsoever. That individuals make reliable responses to complete strangers is a rather well known phenomenon (e.g. Barker, 1942), and is predictable from the principles of generalization. The present formulation therefore must take account of the probable existence of competing responses to each of the person-stimuli present in the group when individuals receive rewards. In some cases avoidance response to particular persons may have to be overcome. There is no reason to suspect, however, that such a

situation differs in any significant respect from other situations in which a new response is conditioned to a stimulus which is already attached to a hierarchy of responses, either to the same hierarchy of which a new response is a low-ranking member, or to a competing hierarchy. Since it is probable that no stimulus is ever neutral, in the absolute sense, the problem is one of degree, in terms of the number and strength of the responses which have already been conditioned to a stimulus to which a new response is to be learned. The new response will become dominant when its reaction potential is raised to the point where it exceeds that for the competing responses (Hull, 1952).

So, within the framework of reinforcement-learning theory, it can be postulated that group cohesion may be greatly facilitated by group members performing tasks which they find intrinsically rewarding. Since rewards in this situation would tend to be quite frequent--indeed almost constant since the intermediary process of instrumental acts is avoided--it could be expected that the development of cohesion (or positive attitudes) would be rather rapid and of considerable strength. Empirical support for this conclusion is not abundant; however, there are a few studies which suggest that being positively rewarded in the presence of other group members may be an antecedent of group cohesion.

Bass (1955) had subjects in a group rank words according to high-school boys' familiarity with them, first privately, then after group discussion, and then again privately followed by the correct

ranking given by the experimenter. Each person's own success (a rewarding outcome) or failure was found to be a significant determiner of his attraction to the entire group. Group goal attainment in this study was unrelated to individual attainment which was primarily a function of individual competence. Similar data have been reported by Spector (1956). Among men operating in the laboratory as military intelligence decoding teams, those "promoted" to sergeant judged their team as being significantly more attractive, and desired to remain within it more often than those not promoted. Further, among the promoted subjects those who thought the probability of promotion to be low were even more favorable in judgements of their group than were those who believed the probability of promotion to be high. Although it is not clear what the achievement of higher status would depend upon, it is doubtful that the subjects believed their teammates to have been instrumental in their promotion or non-promotion.

An experiment conducted by Lott and Lott (1960) has direct implications for the hypothesis under discussion. Three-member groups of children played a game in which some members received rewards and others did not. Later, on a sociometric test given outside the game situation, the rewarded (receipt of plastic car models) children chose a reliably greater proportion of their fellow group members than did the unrewarded children. Whether the former believed that their fellow group members had contributed to their success is a question on which, unfortunately, no data were obtained.

James and Lott (1964) extended the above experiment by varying the frequency of reward obtained in the presence of others and by using an additional test of attraction to group members (i.e. asking each of the group members "Would you like to meet with the group again?"). On each of the tests significantly more of the subjects who received six rewards chose fellow members than did those who received three or no rewards; no significant differences were found between the latter two conditions.

Clearly, the theory as well as the studies presented in this section seem to be better suited to support the relationship between extrinsic rewards and group cohesiveness. However, it is conceivable that this relationship also holds for intrinsic rewards and cohesion. Certainly this is an empirical question, one of a number which were tested in the present study.

The Role of Contingent Rewards in Determining Group Cohesion

If rewards such as pay are given contingent upon performance at a particular level, they legitimately may be conceived of as extrinsic to the performance per se of the activity. That is, there is no inherent connection between the activity and the reward, therefore, the activity is performed in order to get a reward. Thus, this type of reward is only instrumental in that it can be used for other purposes. When contingent pay is conceptualized in this way (i.e. as

a wholly and exclusively extrinsic reward) the discussion presented in the previous section would also seem to apply here. That is, it might be expected that contingent rewards received in the presence of others, versus no rewards at all, would lead to greater group cohesion. However, when contingent pay is viewed as a point on a continuum of extrinsic rewards (i.e., contingent pay versus non-contingent pay for the performance of the same activity) then the relationship between it and group cohesion can be expected to be of a somewhat different nature. Under these circumstances contingent pay should not be expected to generate significantly more cohesion than noncontingent rewards, given that both are received in the presence of others. The question then arises: Why does this variable have individual importance in the study of group cohesion?

Although the level of an extrinsic reward, such as pay, received in the presence of others may not be expected to affect cohesion differentially in a direct way, the possibility does exist that it acts as a modifying factor between other variables and cohesion. It is this possible effect of the variable which is of interest in the present study. In this section, the theoretical and empirical evidence which suggests that contingent pay is a modifying variable of group cohesion is examined.

It should be remembered that in the context of exchange theory it earlier was postulated that success is an important antecedent of cohesion in task-oriented groups. It can be assumed that this relationship will be enhanced through the introduction of contingent pay;

concomitantly the effects of failure on cohesion may also be expected to be more devastating. This relationship obtains because the importance of task related behavior is amplified by the expectancy of contingent pay, thus introducing more tension into the situation. The reduction of this tension (success) will lead to more satisfaction and cohesion, while failure will lead to even more tension and less cohesion.

Regarding intrinsically preferred tasks, the introduction of contingent pay may reduce task motivation rather than enhance it. Previous research (e.g. Deci, 1971; Lepper et al., 1973) suggests that the motivation to perform a task undertaken originally to derive some inherent satisfaction or pleasure will suffer if contingent pay is offered for task involvement. If motivation to perform the task is decreased there will also be a concomitant decrease in the frequency of rewards, thus negatively affecting cohesion.

Though scant, there is some evidence which offers support for the position being presented in this section. This evidence also serves as encouragement for further, more direct, investigation into possible interactions between certain variables believed to be determinants of cohesion and contingent pay.

Harlow et al. (1950) conducted a study of manipulatory behavior in monkeys which demonstrated that (a) monkeys learn to unfasten a puzzle device with no apparent extrinsic incentive, and (b) after an extrinsic incentive is given for unfastening the puzzle the intrinsically motivated behavior deteriorates when the extrinsic

incentive is subsequently removed. Deci (1971) reports two laboratory experiments and one field experiment that were conducted to investigate the effects of external rewards on intrinsic motivation to perform an activity. In each experiment, subjects performed an activity during three different periods, and observations relevant to their motivation were made. External rewards were given to the experimental subjects during the second period only, while the control subjects received no rewards. Of interest to the present discussion was the difference in the experimental groups motivation between Period I and Period III, relative to differences in the controls. The results indicate that when money is used as an external reward, intrinsic motivation tended to decrease; conversely, when verbal reinforcement and positive feedback were used, intrinsic motivation tended to increase. This latter relationship suggests that all forms of extrinsic rewards may not have the same effect as money, thus pointing to the need to understand the role this variable plays in determining cohesion.

In another study reported by Lepper et al. (1973), a field experiment was conducted with children to test the "overjustification" hypothesis suggested by self-perception theory--the proposition that a person's intrinsic interest in an activity may be decreased by inducing him to engage in that activity as an explicit means to some extrinsic goal. Children showing intrinsic interest in a target activity (free drawing with multicolored felt-tipped drawing pens) during base-line observations were exposed to three conditions. In

the expected-award condition, subjects agreed to engage in the target activity again to obtain an extrinsic reward (money in the form of tokens); in the unexpected-award condition, subjects had no knowledge of the reward until after they had finished with the activity; and in the no-award condition, subjects neither expected nor received the reward. The results supported the prediction that subjects in the expected-award condition would show less subsequent intrinsic interest in the target activity than subjects in either of the other two conditions.

Summary

Cohesiveness is generally regarded as one of the most significant characteristics of a group, in that it is thought to be related both antecedently and consequently to other properties of groups, as well as to a large number of additional variables. Because of its complex nature, it is to be expected that a clearer understanding of the determinants and consequents of one group characteristic would aid in the development of fruitful hypotheses regarding others. The approach to group cohesion presented in this chapter was to conceptualize it as a very complex group phenomenon, and, for that reason, to argue that a more complex model for its explanation should be developed. To this end it was suggested that the field may have reached a point where cohesion might more fruitfully be studied as a dependent variable.

It is suggested that while the instrumentalist orientation is very important to research in group processes, it can never provide the complete explanation of these phenomena. Therefore, it is suggested that the group may be viewed to greater benefit as an open system. That groups can validly be viewed as a system is supported by information from the literature on social influence, group norms and roles, and shared fate and functional interdependence in groups.

It is further suggested that the conceptual definition of the phenomenon advanced by Festinger et al. (1950) be retained. However, it is pointed out that the job of researchers interested in this concept is to speculate, develop testable hypothesis, and let the more specific final definition of the concept evolve out of a systematic investigation of the phenomenon as a dependent variable. The specific operational definition adopted for this study is--the ability of groups to foster sufficiently strong bonds among all its members to enable them to interact, resisting forces that would disrupt such relationships. With this definition, attention is directed toward a consideration of variables and conditions which will hold a group together while de-emphasizing what attracts the members of a group to one another.

Several variables which have been demonstrated to have some relevance to cohesion were identified and a case was presented that outcome, participation opportunity, and reward source potentially were among the more important variables affecting group cohesion. Thus, the specific question to be addressed in this study is: How

do these variables act separately and in combination to affect cohesion? The literature reviewed suggests that success, high participation opportunity, and intrinsic rewards may be important independent antecedents to group cohesion. The review also suggests that contingent pay could modify the relationship between at least two of these variables and group cohesion. How these variables interact to affect group cohesion is an empirical question, and is the subject of this research.

Hypotheses

The present research is concerned with the complex nature of group cohesion in task-oriented groups. Because group cohesiveness has not been investigated extensively as a dependent variable, several questions are yet unanswered. For example, of the several variables which have been demonstrated to be positively related to cohesion, what is the nature of the interactions between them which differentially affect group cohesion? The present research is viewed as an initial approach to exploring this issue.

As was noted earlier, the general theoretical framework employed in the study is exchange theory (Thibaut & Kelley, 1959) and within the context of this theory the variables under examination can be expected to interact. It should be remembered that exchange theory maintains that in the initial phase of a relationship, the participant explores the matrix of possible outcomes in an attempt to

evaluate the objective outcome values potentially available in that relationship. Thibaut and Kelley noted that this process of exploring the matrix is accomplished by (1) experiencing samples of the outcomes in segments of the matrix and making inferences about the positivity of these outcomes and by (2) forecasting trends in the outcomes, particularly with regard to their stability. In this context the attempt will always be to maximize rewards while minimizing costs and the expected interactions follow from this instrumental orientation of the individual.

If we assume that members of a task-oriented group are there to perform a task and further that they expect to receive a high amount of intrinsic rewards for performing that task, then outcomes can be expected to exceed their CL and CL alt. only to the extent that they can perform the desired task. To the extent that participation in the task is restricted, rewards can be expected to fall below the CL and CL alt. Following the same line of reasoning, we can assume that if group members expect to receive monetary rewards contingent upon successfully performing the task, outcomes will be evaluated primarily in terms of success. When the group fails the monetary reward will not be gained thus causing outcomes to fall below any members CL and potentially below the CL alt. Thus exchange theory could predict interactions between the four variables under investigation in this study.

It also should be noted in this context that the concern of this study is with groups in which a status differential (between

leaders and followers) exists. Since it is generally accepted that leaders tend to be more satisfied with group membership than are followers, it is expected that leaders may show a slightly different pattern of responses on some measures of cohesion. However, separate predictions regarding leader responses were not made. Given this consideration and based on the previous discussions presented in this chapter the following hypotheses are suggested.

Hypothesis I: Main Effects

Ia.--Those groups which experience success will be significantly more cohesive as compared to those groups which experience failure.

Ib.--Groups whose members experience high participation opportunity will be significantly more cohesive than those groups which experience low participation opportunity.

Ic.--Groups whose members receive high intrinsic rewards for performing the task will be significantly more cohesive than those groups whose members receive low intrinsic rewards for performing the task.

Hypothesis II: Interactions

IIa.--Those groups whose members receive high intrinsic rewards from performing the task are expected to be significantly

more cohesive when participation opportunity is high as compared to groups with low participation opportunity. When intrinsic rewards are low no difference in cohesion is expected as a function of participation opportunity.

Under intrinsic rewards it is expected that success or failure will be less important since members are participating because they find the task rewarding in itself. In other words, when a person is motivated to participate for intrinsic rewards the effect of the extent to which they have an opportunity to participate should be enhanced, while the impact on cohesion of how successful they are at the task should be diminished.

IIb.--Those groups whose members receive contingent pay for performing the task are expected to be significantly more cohesive when the group is successful than when it fails. When pay is not contingent, cohesion should be affected less by success-failure.

This relationship is expected because it is under contingent pay that success and failure are of primary importance. In other words when a person is involved in a task primarily to receive pay which is contingent upon its performance, the extent of success or failure should have a major effect on group cohesion.

IIc.--It is expected that cohesion which results from high intrinsic rewards will be moderated by contingent payment.

This relationship is expected because contingent pay is expected to reduce task motivation. Thus, if task motivation is

decreased there will be a concomitant decrease in the frequency of intrinsic rewards, thus negatively affecting cohesion.

CHAPTER II

METHODOLOGY AND DESIGN OF THE STUDY

This chapter presents the methodology and design that were used to test the hypotheses. A factorial design was used to determine the influence of intrinsic rewards, pay condition, outcome, participation opportunity, and role (i.e., leader-follower) on cohesiveness in task-oriented groups. The task used in this study was a word game which subjects performed for pay. At the end of one hour of work, behavioral and attitudinal measures of cohesion and various dimensions of satisfaction and evaluation were collected.

Selection of Subjects and Experimenters

Subjects

A list of about 500 male subjects was compiled from respondents to a newspaper advertisement soliciting undergraduates who were interested in earning money for participation in psychological research. After the list was compiled, a potential subject was contacted by telephone and, during the conversation, was told that the study required people who differed on how much they liked to play

word games. Then he was asked if he liked to play word games. After the subject had responded either "yes" or "no" to this question, he then was asked to rate himself on a 9 point scale as to how much he liked to play word games, with 9 being "like to play very much," 1 being "dislike very much," and 5 being neutral. Only those persons who rated themselves at the highest three points or the lowest three points were selected for participation in the study. Based on these scores, 240 subjects were assigned to 80, three person groups. Forty groups were composed of members who all had expressed little interest in playing word games, while the members of the 40 remaining groups all had expressed high interest in playing word games. (See Appendix A for the subject contact form which was used during this phase of the project.)

Selection of Experimenters

Four male experimenters were selected from volunteers who were recruited from three social psychology courses. It was explained that a research project was to be undertaken which required male experimenters, and it would offer those chosen an opportunity to gain first hand research experience. All respondents were interviewed and selected based on their apparent maturity, interest in gaining research experience, and reliability. Prior to formal data collection, all experimenters were trained in the procedures necessary to conduct the experimental session.

The Experimental Task

The task selected for this study was a slightly modified version of the game of "twenty questions" (Lindley, 1897; Taylor & Faust, 1952). The task for each experimental session involved the identification of three objects by the twenty questions procedure. During each group session the three objects were chosen at random by the experimenter from among eight items on a difficult list or from among seven items on a moderately easy list depending on the condition[7] (see Appendix A). The experimenter was not informed of any systematic differences in the two lists.

The subjects were instructed to try to guess the identity of an object which the experimenter initially defined as either animal, vegetable or mineral. Since this information alone would have proven insufficient for the subjects to guess the identity of the object, they had to ask the experimenter questions (up to a maximum of 20) which would enable them to narrow down the range of possible answers and eventually arrive at correct solution. The subjects were required to phrase their question in such a way that they could be answered either "yes," "no," "partly," "sometimes," or "not in the usual sense of the word." If any of the subjects questions were

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[7]The 15 objects were selected from an original list of 30 based on pilot testing. The objects included on the difficult list were never solved during pilot testing. The objects included on the moderate list were always solved after a minimum of ten questions.

unclear or could not be answered in one of the above mentioned ways, the subjects were asked to restate those questions.

Each game ended when the subjects had either correctly identified the object, or when they had used up, without success, all of the twenty questions allowed them, or when 15 minutes had elapsed.

Instrumentation

Four types of instruments were used in this study to manipulate three of the five factors of the design and to measure cohesion and other dimensions of the groups activities.

Subject Contact Form

The first instrument was the seven item Subject Contact Form (see Appendix A). As described above, this form was used to select subjects who were likely to derive high intrinsic rewards and subjects who were likely to derive low intrinsic rewards from performing the experimental task. Another important purpose of the form was to help create a framework for the study and provide a basis for the administration of the dependent measures described below. Item 4 led subjects to believe that they were agreeing to participate in a research project which would take place over three separate sessions. The form also provided information on each subject's "convenient time," which was used for scheduling purposes.

Word List

As noted above, the 15 target objects used in this study (8 difficult and 7 easy) were selected based on data from pilot testing, and were used to manipulate success and failure (see Appendix A). In the success condition subjects were presented with three moderately easy words to identify. In the failure condition subjects were presented with one moderately easy and two difficult objects to identify. In the failure condition the moderately easy object was introduced first (so that subjects could earn their money) and was followed by the two difficult objects to generate the perception of overall poor performance and failure in the session.

Pay

The pay condition variable was manipulated by varying the timing of the "payoff." In the contingent pay condition, subjects were paid immediately following a successful performance; this was done to strengthen the relationship between performance and reward. For success, and contingent pay, the subjects were told in advance (at the beginning of the session) that each of them would receive $1.00 for each object they correctly identified. For failure and contingent pay, the subjects were told that they would receive $3.00 for every object they correctly identified. For these subjects, there was one success (in the first game) and two failures. In the noncontingent pay condition, the subjects were not paid immediately

following successful performance and there was no mention of money for performing the task; instead, they were given $3.00 just before the instructions were read. This was done to decrease the chance of subjects forming any relationship between receiving the money and performing the task.

Instructions

A portion of the instructions was used to manipulate participation opportunity and role (see Appendix B). Each group was randomly assigned a leader. The rationale that was given the subjects for having a leader was that it simulated the organization of the typical task-oriented group. In this way it was assumed that the problem of attacking a member's self-esteem (not being chosen as leader) could be avoided. In the high participation opportunity condition all members of the group were instructed to feel free to participate and to make contributions to the solution of the problem. In this condition subjects were required to reach consensus on each question before giving their solution to the experimenter. In the low participation opportunity condition it was emphasized that no one except the leader could participate freely in the group's solution, and that all other members must not contribute except when asked to by the leader. To be sure that participation opportunity, in fact, was restricted, the leader was instructed to view the other group members as "potential" resource persons to be conferred with only as

he needed more information. Furthermore, the leader was instructed that he must ask every other question without conferring with the other group members. This procedure guaranteed that each of the remaining group members would be left out of nearly 50 per cent of the decisions. As an added precaution, the experimenter, who was always present, kept a tally of actual participation behavior (see Appendix B, Experimenter Report Form) and, when necessary, reminded the subjects when they could or could not participate. (It should be noted that this study involved the manipulation of a subject's participation opportunity and therefore a simultaneous manipulation of his actual participation. In fact, then, the separate effects of participation and participation opportunity could not be measured, but for purposes of convenience, this composite manipulation is referred to simply as participation opportunity).

Another portion of the instructions reinforced the previously introduced conception that the study was going to involve three separate sessions by stating that "two more sessions will be scheduled in the near future."

Dependent Measures

Three dependent measures were employed in this study to test the effects of the five factors on the cohesiveness of task-oriented groups. The measures were: 1) an action commitment measure of cohesion; 2) an action commitment measure of task satisfaction; and

3) a questionnaire designed to measure subject's perception of various dimensions of group functioning. Each of the dependent measures will be discussed in detail in the next chapter. Here we wish only to introduce them and give their order of presentation.

The first measure administered to the subjects at the end of the session was the fifteen item Member Reactions Questionnaire (see Appendix A), modified for use in this study from a similar questionnaire developed by Anderson (1974). The questionnaire employs a 7-point Likert-type response scale for each item. The particular scales of interest were nine items which are believed to tap the individual's evaluation of the group and his part in it. (Each of the nine items used is indicated by an asterisk on the questionnaire presented in Appendix A.) The second dependent measure administered to the subjects was the 3-item Group Transfer Form (see Appendix A) also constructed by Anderson (1974) and administered at the end of the session. The final dependent measure was a two-item task satisfaction questionnaire (see Appendix A) constructed for this study and administered after the Group Transfer Form.

Design and Procedure

Design

Subjects were tested in 80, three person groups--40 high and 40 low intrinsic interest triads--which were randomly assigned to the remaining experimental conditions. The seating position of the members around a small rectangular table and their roles within the group were also randomly assigned. This procedure yielded an orthogonally factorial design whose dimensions were 2 (intrinsic reward) x 2 (pay condition) x 2 (outcome, i.e. success-failure) x 2 (participation opportunity) x 2 (role). Each subject was paid $3.00 for his time, which provided the opportunity to manipulate the pay condition variable.

Setting

The experimental sessions took place in a "work room" which had the dimensions of approximately 12' x 8'. Two tables were located in the center of the room with four chairs arranged around them. The experimenter was seated at a separate table located at the head of the first table. This arrangement looked like a "T" with the experimenter seated at the top and the subjects seated at the bottom.

Procedure

As the subjects arrived, the experimenter seated each person at his previously assigned location. Subjects were then given the following background statement:

> "I am glad that you all could come. Now I'd like to give you a little background on this project. The director of this research project has been hired by a local research firm to develop employee selection criteria for them. He in turn has hired you to help in doing this. All the employees in this firm work in 3 person research teams. The Company wants to know what things are most important, besides the actual research skills, to select employees on in order for them to work well in task-oriented problems solving groups. Over the next several weeks we will be attempting to simulate various aspects of the working situation and collecting data in these different situations. We hope that this will allow us to develop the necessary selection criteria to be used by this firm. As this work is important to us we ask that you take your role seriously because it is important." (At this point, subjects in the noncontingent pay condition were given $3.00.)

After the background statement, appropriate instruction sheets were passed out and read (see Appendix B), introduced by the following statement:

> "In this particular session, your task will be to play the game of twenty questions. Since some of you may not be familiar with

the rules, I will explain them. Here is a printed set of instructions which you may read to yourself as I read them aloud."

After the instructions were read the experimenter asked for questions. (If there were no questions the experimenter proceeded with the game as detailed below. If there were questions, the experimenter tried to answer them by rephrasing the original instructions. If this was not possible, he avoided answering the question.) Once the questions were answered the session was continued by the experimenter saying the following:

"All right, we will now begin work on the first of the three problems. The first object is _____ (animal, vegetable, or mineral). You may now proceed to discuss the first question you wish to ask me. When the question is formulated, please direct it to me and I will give you an answer."

The experimenter always answered either "yes," "no," "partly," "sometimes," or "not in the usual sense of the word." If none of these answers were possible or the question was unclear, the experimenter asked the group to restate the question by saying the following:

"The question you asked was _____ (unclear, could not be answered "yes," "no," "partly," "sometimes," or "not in the usual sense of the word). Please reconsider your question and decide how you want to reformulate it. When you have finished, please direct your new question to me."

After a properly formulated question has been answered the experimenter responded as follows:

"Now please formulate your second question following the rules of the game."

When a second question was asked, the experimenter followed the same procedure in answering as was followed for the first question. This procedure was repeated until either the object was correctly identified, or the twenty permissible questions were exhausted without success, or time elapsed.

When a problem was solved correctly, the experimenter said: "That is correct." (In the contingent pay condition, this statement was followed by: "Each of you has now earned $1.00 or $3.00," and money was passed out to each individual.)

If the problem was not solved after twenty questions were asked, the experimenter said:

"I'm sorry, you did not arrive at the correct answer, which is _____." (The correct answer was given and shown to the subjects when necessary.)

If the problem was not solved after fifteen minutes had elapsed, the experimenter said:

"I'm sorry, but time is up. The correct answer is _____."

After the completion of the first game, the experimenter said: "Now we will go on to the second game. The next object for you to identify is _____(animal, vegetable, or mineral). Please formulate your first question."

After the completion of the second game, the experimenter said:

"This will be the last game of the session. The next object for you to identify is _____ (animal, vegetable, or mineral). Please formulate your first question."

When the last problem has been completed, the experimenter said:

"That was the last of the three problems for today. Now I have a short questionnaire that I would like for you to complete. Will you please move to one of the desks in the corner of the room."

When the first subject finished the Member Reaction Questionnaire, it was collected and the experimenter announced that he would like to speak to each subject, separately, in the hall. Each subject was taken individually into the hall where the Group Transfer Form and the Task Reaction Form was administered.

When each subject had finished the additional measures he was informed that after all of the groups had been run through the first session, he would be contacted regarding his participation in any additional sessions. The subject was then asked to please leave his name, telephone number and address so that we could be sure to get in touch with him. The subject was then thanked for his participation and excused.

Debriefing

Subjects were not debriefed, instead the participation in future sessions was left equivocal. After each subject had responded on the Transfer Form and the Task Reaction Form, he was also told--in addition to the above statement--that "as you know this research requires that we use 3-person groups so depending on scheduling problems you will be contacted regarding your participation in any additional sessions." So, in fact subjects were not debriefed in the traditional way and they did not fully expect to be asked to participate in additional sessions.

CHAPTER III

RESULTS

The Dependent Measures

As described above, two types of measures were used in order to determine the effects of the four factors on cohesiveness and various other aspects of the group. To aid the readers understanding of this chapter, it may be helpful first to review briefly what the dependent measures were.

Action Commitment Measures

Cohesion.--The first measure was a membership decision test in which subjects were given the choice of staying in their group or changing to another one. This was thought to be a direct test of the cohesiveness of a group, in that, if cohesiveness is the ability of groups to foster sufficiently strong bonds among all its members to enable them to interact, resisting forces that would disrupt such relationships, then a member choosing not to remain would be the most appropriate measure of the phenomenon. Thus, the behavioral test for followers was the number of members who chose to leave the group; for leaders, it was the number of groups disrupted by the leader choosing

to leave the group (irrespective of follower choice). These measures were seen as the major variable in the present examination of the conditions that contribute significantly to the cohesiveness of task-oriented groups.

Task Satisfaction.--The second measure was a test in which the subjects were asked how much they would like to change tasks. The question carried with it the clear implication that if the subject so desired, he would be involved in a different task in future sessions. This was also thought to be a direct measure of the amount of intrinsic interest and rewards a subject derived from performing the task, in that it measures the subject's willingness to change tasks.

Attitudinal Measures

The second type of measure was a subjective perception test in the form of a questionnaire. The particular scales of interest were nine items which are believed to tap the individuals evaluations of the group and his part in it.

The scale of greatest relevance measured one consequence of cohesion by asking the subject to make a retrospective evaluation of the group by expressing his desire to work with the same people in future sessions of the study. Other scales measured the perception of participation opportunity, the perception of the group's success, in performing its task, and various dimensions of satisfaction

(i.e. membership, the group performance, role, atmosphere, organization and degree of personal involvement).

Analysis

The data presented in this chapter were subjected to three different types of analyses; a brief discussion of each follows.

Action Commitment Measures of Cohesion

Two types of analyses were used on these data to test the effects of the four factors on group cohesion. Follower scores were subjected to a univariate analysis of variance. Chi-square (Winer, 1971, pp. 858-859) was used to analyze the effects of the factors on leader choice.

Attitudinal Measures

As discussed in more detail in Appendix C, all scores derived from the subjective perception test and the behavioral measure of task satisfaction were subjected to a multivariate analysis of variance with repeated measures on role (i.e. leader vs followers). Given the focus of this research, however, primary concern was given

to only a portion of the associated univariate F ratios which were derived in conjunction with the multivariate analysis.

Manipulation Checks.--To determine the degree of success in manipulating intrinsic interest, success-failure, and participation opportunity, certain univariate F ratios were examined irrespective of the significance level obtained for the multivariate F ratio. For the independent variable of intrinsic interest the univariate test of the task satisfaction measure was examined, for success-failure, the univariate test of the success measure was examined; and for participation opportunity, the univariate test of the participation opportunity measure was examined.

Cohesion.--For all tests involving cohesion, the multivariate F ratio was used as a guide to determine the appropriateness of examining specific effects from the univariate analyses. Only when the multivariate F ratio exceeded .05 were any of the univariate tests relevant to cohesion examined. Since clear theoretical reasons exist for the hypotheses being examined, a significance level of .10 was set for all univariate effects involving cohesion.[8] It should be noted, however, that those obtained values which barely exceed the critical value of the F ratio established for this study (i.e., $.05 < p < .10$) are interpreted as offering only marginal support for the hypothesis under examination.

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[8]Winer (1971, p. 384-388) has suggested that when clear theoretical reasons exist, it may be more appropriate to use a lower significance level than is dictated by convention.

Other Dependent Measures.--Again, the multivariate F ratio was used as a guide to the examination of the additional scales, including those which were used to check the validity of the manipulations. However, since these results are only of peripheral relevance to the focus of the present research--and their great number would tend to overshadow the findings for the measures of cohesion--they are presented in detail in Appendix C, rather than in this chapter.

Organization of the Chapter

The remainder of this chapter presents the relevant results of the various analyses performed on the data. The chapter is organized into three major sections. The first section presents the results of the tests performed to check the success of the manipulations. The second section presents results from both the action commitment and attitudinal measures relevant to group cohesion and were subdivided further into the following sections: 1) findings common to followers and leaders; 2) findings applicable to followers only; and 3) findings applicable to leaders only. The final section presents a brief summary of all results relevant to the hypotheses.

Success of Manipulations

Intrinsic Interest

The item used to check this manipulation was: "How much would you like to change tasks." Subjects responded via a 7-point scale, with 1 being "do not want to change at all" and 7 being "want to change very much." This was considered to be an appropriate measure, since it follows that people who find a task intrinsically interesting would also derive intrinsic rewards from performing that task, and, as a consequence, they should not be very willing to change tasks. On the other hand, those people not intrinsically interested in performing the same task should not find it very rewarding and, therefore, should be quite willing to change tasks when given the opportunity to do so. Thus, a main effect for intrinsic interest was expected on this item, with significant differences between high and low levels of interest.

As expected the multivariate main effect for intrinsic interest was significant ($F = 2.95$, $df = 10/55$, $p < .005$). A subsequent univariate analysis indicated that this effect was significant for the task change item ($F = 10.22$, $df - 1/64$, $p < .001$). As expected, high interest subjects expressed a lower desire ($\bar{X} = 3.49$) to change the task than did the low interest subjects ($\bar{X} = 4.62$).

Participation Opportunity

The item used to check this manipulation was: "I felt restricted in the amount of my opportunity to participate in the group's decisions." Given a valid manipulation, a main effect for participation opportunity was expected on this item, with significant differences between high and low levels of participation opportunity. As expected the multivariate main effect for participation opportunity was significant (F = 26.63, df = 10/55, $p < .0001$). A subsequent univariate analysis revealed a significant difference between levels of participation opportunity (F = 223.60, df = 1/64, $p < .0001$). The high opportunity subjects felt that the amount of their participation opportunity was much higher ($\bar{X}$ = 6.23) than the low opportunity subjects ($\bar{X}$ = 4.21).

Success-Failure

The item used to check this manipulation was: "I felt this group was successful in solving the problems presented to us in this session." Thus, a main effect for success was expected on this item, with a significant difference between success and failure conditions. As expected the multivariate main effect for success-failure was significant (F = 71.59, df = 10/55, $p < .0001$). A subsequent univariate analysis revealed a significant difference on the success item (F = 596.95, df = 1/64, $p < .0001$). Members of successful

groups responded much more positively ($\bar{X}$ = 6.53) than did members of failing groups ($\bar{X}$ = 2.20).

Findings Relevant to Cohesion

The results presented in this section were generated from both the action commitment and attitudinal measures. However, before presenting these results in detail, it may be helpful first to present a brief recapitulation of the sources of these data and forms in which they were analyzed.

The first test of the effects of the independent variables on group cohesion were derived from responses on the Group Transfer Form (see Appendix A). As noted above, this form presented subjects with the choice of staying in their groups or changing to another one for future sessions. Thus, the test of cohesion for followers on this measure was the number of members per group (0-2) who chose to stay. For leaders, the test was the number of groups whose leader chose to remain, irrespective of follower choice. Cohesion scores for followers were then submitted to a four-way univariate analysis of variance. Table 1 presents a complete summary of this analysis. Leader cohesion scores were examined through a chi-square analysis. Table 2 presents a complete summary of this analysis.

The second test of the effects of the five factors on group cohesion were derived from responses to the Member Reaction Questionnaire (see Appendix A). The specific item used for this analysis was:

Table 1.--Summary of Univariate Analysis of Variance of Behavioral Data of Followers.

Source		df	MS	F
Intrinsic Interest	(A)	1	0.010	0.031
Pay Condition	(B)	1	0.310	0.954
Success-Failure	(C)	1	17.110	52.646***
Participation Opportunity	(D)	1	2.810	8.646**
A X B		1	0.015	0.046
A X C		1	0.715	2.200
A X D		1	2.115	6.508**
B X C		1	4.615	14.200***
B X D		1	0.015	0.046
C X D		1	1.015	3.123*
A X B X C		1	0.310	0.954
A X B X D		1	0.310	0.954
A X C X D		1	0.610	1.877
B X C X D		1	0.010	0.031
A X B X C X D		1	0.115	0.354
Error		64	0.325	--

* $p < .10$

** $P < .01$

*** $p < .001$

Table 2.--Summary of Chi Square Analysis of Leaders' Behavioral Data.

Source		df	χ^2
Intrinsic Interest	(A)	1	0.738
Pay Condition	(B)	1	6.646**
Success-Failure	(C)	1	4.021*
Participation Opportunity	(D)	1	0.738
A X B		1	0.070
A X C		1	0.082
A X D		1	0.082
B X C		1	9.427***
B X D		1	2.051
C X D		1	0.075
A X B X C		1	0.597
A X B X D		1	0.752
A X C X D		1	1.306
B X C X D		1	0.031
A X B X C X D		1	1.347

* $p < .05$

** $p < .01$

*** $p < .001$

"If I was taking part in another group experiment, I would like to work with this same group." Scores per group were the leader's response and the mean of the two followers' scores. Thus, the leader score was given equal weight to the combined follower scores. This procedure was followed in order to allow a more exact examination of differences as a function of role (i.e. leader versus follower). Table 3 presents a complete summary of the univariate tests from the multivariate analysis of variance, with repeated measures on role, performed on these data.

Table 3.--Summary of Univariate Tests on Attitudinal Measure of Cohesion.

Source		df	MS	F	P
Intrinsic Interest	(A)	1	4.389	3.153	.08
Pay Condition	(B)	1	1.314	.944	NS
Success-Failure	(C)	1	92.264	66.273	.0001
Participation Opportunity	(D)	1	10.764	7.732	.007
A X B		1	6.201	4.454	.03
A X C		1	.766	.055	NS
A X D		1	7.014	5.038	.02
B X C		1	1.701	1.222	NS
B X D		1	1.914	1.374	NS
C X D		1	4.1290	2.920	.09
A X B X C		1	4.727	3.396	.07
A X B X D		1	.452	.324	NS
A X C X D		1	3.452	2.480	NS
B X C X D		1	.766	.055	NS
A X B X C X D		1	.766	.055	NS
Error I		64	1.39	--	--
Role (E)		1	33.153	20.441	.0001
A X E		1	3.403	2.098	NS
B X E		1	.153	.094	NS
C X E		1	9.453	5.829	.01
D X E		1	4.753	2.930	.09
A X B X E		1	1.378	.850	NS
A X C X E		1	2.628	1.620	NS
A X D X E		1	.003	.009	NS
B X C X E		1	4.278	2.637	NS
B X D X E		1	3.452	2.480	NS
C X D X E		1	3.403	2.098	NS
A X B X C X E		1	8.778	5.412	.02
A X B X D X E		1	2.628	1.620	NS
A X C X D X E		1	.528	.326	NS
B X C X D X E		1	1.378	.849	NS
A X B X C X D X E		1	.028	.017	NS
Error II		64	1.51	—	—

Findings Common to Followers and Leaders

Hypothesis 1a

Consistent with hypothesis 1a, the analysis of both the behavioral and attitudinal data yielded a significant main effect for success-failure, which held for followers as well as for leaders.

Action Commitment Test.--The action commitment test for both followers and leaders revealed that groups were more cohesive when they were successful than when they were not. Table 4 presents the

Table 4.--Total Choices to Remain In Group as a Function of Success-Failure.

	Success	Failure
Followers	69	32
Leaders	36	27

cell totals obtained from this test of cohesion. Examination of this table shows that followers and leaders chose to remain in their groups significantly more often when they were members of successful groups than when they were members of failing groups.

Attitudinal Test.--As previously reported the multivariate main effect for success-failure was significant. A subsequent univariate test of the cohesion data revealed a significant difference

between successful groups and nonsuccessful groups as expected. Members of successful groups expressed a stronger desire ($\bar{X}$ = 5.78) to work with the same group in future sessions than did members of failing groups ($\bar{X}$ = 4.26).

The multivariate analysis of the success-failure x role interaction also yielded significant results. Therefore, a univariate analysis of the cohesion data was performed. The results of this test also yielded a significant interaction between these factors ($p < .01$). Table 5 presents the means relevant to this effect.

Table 5.--Mean Questionnaire Response Relevant to the Success-Failure X Role Interaction.

	Followers	Leaders
Success	5.63	5.93
Failure	3.76	4.75

Subsequent analysis of this interaction through a test of the simple effects revealed that leaders were not as susceptible to the effects of success-failure as were followers, although differences were in the same direction for both roles. Thus, there was a significant difference (F = 63.64) between followers as a function of outcome, with followers in successful groups being more cohesive than followers in failing groups. This difference (F = 25.09) also held for leaders,

with leaders in successful groups being significantly more cohesive than leaders in failing groups. Of interest, however, is that it seems that leaders responded more favorably to both success and failure than did followers.

Hypothesis 2b

Consistent with Hypothesis 2b, the analysis of both the action commitment and attitudinal data yielded a significant pay condition x success-failure interaction, which held for both followers and leaders. Data which examine this relationship are presented below.

Action Commitment Test.--Table 6 presents the cell totals derived from follower scores relevant to the interactive effects of

Table 6.--Cell Totals Derived From Follower Scores Relevant to the Pay Condition x Success-Failure Interaction.

	Remain in Group	
	Contingent Pay	Noncontingent Pay
Success	36	33
Failure	12	20

pay condition and success-failure on cohesion. The analysis of these data, through tests of simple effects, revealed that under both

contingent and noncontingent pay, groups were much more cohesive when they were successful than when they failed. Inspection of the table indicates, however, that as expected, under contingent pay the difference between success and failure was much greater ($F = 44.31$, $p < .0001$) than the difference between success and failure under noncontingent pay ($F = 11.2$, $p < .005$). Table 7 presents the cell

Table 7.--Cell Frequencies Derived From Leader Scores Relevant to the Pay Condition x Success-Failure Interaction.

	Remain in Group	
	Contingent Pay	Noncontingent Pay
Success	18	18
Failure	10	19

frequencies derived from the leader scores. Inspection of this table reveals that under contingent pay the leaders chose to remain in their groups significantly more often ($X = 5.03$, $p < .025$) when their groups were successful than when their groups failed. Somewhat contrary to the results for followers, however, there was no difference between success and failure when pay was not contingent.

Attitudinal Test.--Examination of the subscale derived from the questionnaire tended to support the results of the behavioral data. However, the results from the subjective perception test suggest that the relationship between pay condition and success-failure

may not be as simple as the behavioral data indicated. Tables 8 and 9 present the cell means relevant to the intrinsic interest x pay condition x success-failure x role interaction on cohesion. (The multivariate analysis yielded a significant interaction on these factors so the univariate analysis was performed.)

Table 8.--Mean Questionnaire Responses Relevant to the Intrinsic Interest x Pay Condition x Success-Failure x Role Interaction for Followers.

	Contingent Pay	Noncontingent Pay
Success	5.76	5.48
Failure	3.46	4.75

Table 9.--Mean Questionnaire Responses Relevant to the Intrinsic Interest x Pay Condition x Success-Failure x Role Interaction for Leaders.

	High Intrinsic		Low Intrinsic	
	Contingent Pay	Noncontingent Pay	Contingent Pay	Noncontingent Pay
Success	5.90	6.30	5.70	5.80
Failure	5.20	4.20	4.10	5.50

Since there was a significant main effect for role, with leaders ($\bar{X}$ = 5.34) being more cohesive than followers ($\bar{X}$ = 4.69), a

distinction along this same dimension was made as a first step in the systematic simple effects analysis of this interaction. Tests of simple effects on follower scores (Table 8) revealed that the intrinsic interest x pay condition x success-failure interaction was not significant; however, the pay condition x success-failure interaction was (though only marginally) ($F = 3.95$, $p < .10$). Further tests revealed that followers who received contingent pay were significantly more cohesive ($F = 48.06$, $p < .001$) when they are members of successful groups than when they are members of failing groups. There was no difference between followers as a function of success-failure when pay was not contingent.

Results for leaders (Table 9) were generally consistent with those for followers. A test of simple effects revealed, however, that the intrinsic interest x pay condition x success-failure interaction was significant ($F = 8.09$, $p < .01$). Since the pay condition x success-failure interaction was the one of primary interest, data were divided as a function of levels of intrinsic interest. For high intrinsic interest the pay condition x success-failure interaction was significant ($F = 4.90$, $p < .05$). Further tests of simple effects revealed that high intrinsic leaders who received contingent pay did not differ significantly in their desire to work with the same group in future sessions as a function of success or failure. However, for high intrinsic leaders who did not receive contingent pay, those who were members of successful groups were significantly more cohesive ($F = 20.00$, $p < .001$) than those who were members of failing groups.

Thus, the relationship between pay condition and success-failure for these leaders was opposite from that which could be expected.

For low intrinsic leaders the pay condition x success-failure interaction was marginally significant ($F = 3.93$, $p < .10$). Further exploration of the interaction through additional tests of simple effects revealed that low intrinsic leaders receiving contingent pay were significantly more cohesive ($F = 11.63$, $p < .001$) when they were members of successful groups than when they were members of failing groups. There was no difference as a function of success-failure for those low intrinsic leaders who did not receive contingent pay. Thus, the relationship between pay condition and success-failure was as expected for low intrinsically interested leaders.

Hypothesis 1c

Hypothesis 1c predicted that groups whose members received intrinsic rewards from participation would be significantly more cohesive than groups whose members do not receive intrinsic rewards for participation. The results from the analysis of action commitment data did not support this prediction, since the main effect for interest was not found to be significant.

Attitudinal Tests.--Analysis of the subscale derived from the questionnaire did offer some support for the effect of intrinsic interest. As previously reported, the multivariate main effect for

intrinsic interest was significant. Subsequent univariate analysis of the cohesion item revealed that there was a marginal difference between subjects ($F = 3.15$, $p < .08$) regarding their expressed desire to work with the same group in future sessions. Subjects with high intrinsic interest in the task were slightly more cohesive ($\bar{X} = 5.18$) than subjects with low intrinsic interest in the task ($\bar{X} = 4.85$).

Hypothesis 2a

The prediction of Hypothesis 2a was that groups whose members received high intrinsic rewards for performing the task would be more cohesive when they experienced high participation opportunity than when they experienced low participation opportunity. This relationship was supported by both the action commitment and attitudinal tests.

Action Commitment Test.--Table 10 presents the cell totals relevant to the intrinsic interest x participation opportunity

Table 10.--Cell Totals Derived From Follower Scores Relevant to the Intrinsic Interest x Participation Opportunity Interaction.

	High Intrinsic	Low Intrinsic
High Participation Opportunity	32	26
Low Participation Opportunity	18	25

interaction derived from the behavioral measure of followers. Examination of these scores through a test of the simple effects indicated that subjects who received high intrinsic rewards for performing the task chose to remain in their groups significantly more often ($F = 15.08$, $p < .001$) when their participation opportunity was high than when their participation opportunity was low. Those subjects receiving low intrinsic rewards for performing the task showed no difference in the choice to remain in the group as a function of participation opportunity. As would be expected, leaders did not respond differentially as a function of follower participation opportunity.

Attitudinal Test.--Examination of the subjective perception measure of cohesion derived from the questionnaire tended to support the results of the behavioral data. Table 11 presents the means

Table 11.--Mean Questionnaire Responses Relevant to the Intrinsic Interest x Participation Opportunity Interaction.

	High Intrinsic	Low Intrinsic
High Participation Opportunity	5.65	4.90
Low Participation Opportunity	4.71	4.80

relevant to the intrinsic interest x participation opportunity interaction (across roles).

A test of simple effects on these data suggested that subjects who received high intrinsic rewards for performing the task were significantly more inclined to work with the same group (F = 12.29, $p < .001$) in future sessions when the groups participation opportunity was high than when it was low. For subjects receiving low intrinsic rewards for performing the task there was no difference in their expressed desire to work with the same group as a function of participation opportunity.

An Unexpected Finding

An unexpected finding indicates that there was a tendency for subjects to respond differentially to participation opportunity as a function of failure. Findings which examine the success-failure by participation opportunity interaction are presented below.

Action Commitment Test.--Table 12 presents the cell totals relevant to success-failure x participation opportunity interaction

Table 12.--Cell Totals Derived From Follower Scores Relevant to the Success-Failure x Participation Opportunity Interaction.

	Success	Failure
High Participation Opportunity	36	22
Low Participation Opportunity	33	9

derived from the measure of followers. A test of simple effects performed on these scores reveals that followers who were members of failing groups chose to remain in their groups significantly more often (F = 11.08, p < .005) when the structure of that group allowed high participation opportunity than when it offered low participation opportunity. Followers in successful groups reported no difference in their choices to remain in their groups as a function of participation opportunity. This interaction was not significant for leaders.

Attitudinal Test.--Examination of the means derived from the attitudinal measure of cohesion offers support for the results of the behavioral test. Table 13 presents the means relevant to the

Table 13.--Mean Questionnaire Responses Relevant to the Success-Failure x Participation Opportunity Interaction.

	Success	Failure
High Participation Opportunity	5.88	4.68
Low Participation Opportunity	5.68	3.84

significant success-failure x participation opportunity (across role) interaction obtained from the questionnaire.

Inspection of these means through a test of simple effects reveals that members of failing groups reported that they would like

to work with the same group in future sessions significantly more (F = 10.00, p < .005) when their participation opportunity was high than when their participation opportunity was low. Again, members of successful groups reported no difference in their desire to work with the same group as a function of participation opportunity.

A Finding Applicable Only to Followers

Hypothesis 1b

Consistent with Hypothesis 1b, analysis of both the action commitment and attitudinal data yielded a significant participation opportunity main effect for followers. (However, reasonably, no effect for participation opportunity was obtained for leaders.) Results from these tests are presented below.

Action Commitment Test.--Results of the analysis of these data indicated that more followers who experienced high participation opportunity chose to remain in their groups (58) than did followers who experienced low participation opportunity (42).

Attitudinal Test.--Results from the subjective perception test of cohesion supported the results obtained from the behavioral test. As previously mentioned, the multivariate main effect for participation opportunity was significant and a univariate test on cohesion for this factor also yielded a significant main effect. In addition the multivariate analysis also revealed a significant

participation opportunity x role interaction, and the results of the univariate analysis of cohesion also yielded a marginally significant interaction between these factors ($p < .09$). Table 14 presents the

Table 14.--Mean Questionnaire Responses Relevant to the Participation Opportunity x Role Interaction on Cohesion.

	Followers	Leaders
High Participation Opportunity	5.08	5.48
Low Participation Opportunity	4.31	5.20

means relevant to this interaction. Examination of these means through a test of simple effects revealed that followers in high participation opportunity groups expressed a much greater desire ($p < .01$) to work with the same group in future sessions than did followers in low participation opportunity groups. As expected, leaders did not express a significant difference in their desire to work with the same group as a function of followers' participation opportunity.

Findings Applicable Only to Leaders

An Unexpected Finding

Another unexpected finding relevant to cohesion was that leaders responded differentially to pay condition. An examination of this main effect is presented below.

Action Commitment Test.--Analysis of these data for leaders indicates that there was a main effect for pay condition, with more leaders choosing to remain in their groups (37) when they received noncontingent pay than when they received contingent pay (28). However, this main effect can be shown to be a direct function of the success-failure x pay condition interaction. A re-examination of Table 7 shows that there was no difference in leaders' choices to stay in their groups as a function of pay condition when their group was successful, but when their group failed the difference was significant ($X^2 = 5.08$, $p < .025$). It seems then, that the main effect for pay condition on the action commitment measure was derived as a function of the low number of leaders who chose to remain in their failing groups when they received contingent pay. Moreover, a pay condition main effect was not obtained on the attitudinal measure.

Hypothesis 2c

Hypothesis 2c predicted that groups whose members received high intrinsic rewards for performing the task would be less cohesive when they were paid contingently than when they were not paid contingently. This interaction was not obtained from an analysis of the action commitment data for either followers or leaders. Thus the major test of cohesion did not support this prediction.

Attitudinal Test.--Results from the subjective perception test yielded a significant intrinsic interest x pay condition interaction, as well as a marginally significant intrinsic interest x pay condition x success-failure interaction. However, both of these interactions are qualified by the significant intrinsic interest x pay condition x success-failure x role interaction previously discussed. Table 9 presents the means for leader scores relevant to this interaction.

As noted above, exploration of this interaction revealed that a significant intrinsic interest x pay condition interaction was not obtained for followers (see Table 8); however, it was for leaders. Dividing this interaction as a function of success and failure and performing a test of simple effects from this perspective revealed that a significant intrinsic interest x pay condition interaction for leaders occurred only under failure ($F = 13.09$, $p < .001$). Further exploration of this interaction through additional tests of simple effects indicated that those leaders with high intrinsic interest in the task who received contingent pay were significantly more

cohesive (F = 4.54, $p < .05$) than those who received noncontingent pay. However, there was a reversal under low intrinsic interest. That is, leaders with low intrinsic interest were significantly more cohesive (F = 8.91, $p < .005$) when they were not paid contingently than when they received contingent pay. Thus, these results suggest that these variables only interact for leaders in failing groups. Furthermore, they suggest that the interactive effects of intrinsic interest and pay condition were opposite from those which were expected.

Summary of Results Relevant to the Major Hypotheses

This chapter has presented a rather large amount of data derived from the results of the various analyses. Therefore, it may be helpful to pause before going into a detailed discussion of these results, to review briefly the major hypotheses of the study along with the data which are relevant to them.

Hypothesis 1a predicted that those groups which experienced success would be significantly more cohesive than those groups which experienced failure. The results presented in this chapter offered strong support for this prediction (see Tables 1-5).

Hypothesis 1b predicted that groups whose members experienced high participation opportunity would be significantly more cohesive than those which experienced low participation opportunity. Again both the action commitment and attitudinal tests of followers

responses offered strong support for this prediction (see Tables 1, 3 and 14).

Hypothesis 1c predicted that groups whose members received high intrinsic rewards for performing the task would be significantly more cohesive than those groups whose members received low intrinsic rewards. This prediction was not supported by the action commitment data and received only marginal support from the attitudinal data (see Table 3).

Hypothesis 2a predicted that those groups whose members received high intrinsic rewards for performing the task would be significantly more cohesive when participation opportunity was high than when it was low. When intrinsic rewards were low no difference in cohesion was expected as a function of participation opportunity. Data from both the action commitment and attitudinal measures tended to support this prediction (see Tables 1, 3, 10 and 11).

Hypothesis 2b predicted that those groups whose members received contingent pay for performing the task would be significantly more cohesive when the group was successful than when it failed. When pay was not contingent this difference in cohesion was expected to be smaller. The analysis of both the action commitment and attitudinal data offered support for this prediction (see Tables 1, 2, 3, 6, 7, 8 and 9).

Hypothesis 2c predicted that groups whose members received high intrinsic rewards for performing the task would be less cohesive when they were paid contingently than when they were not paid

contingently; when intrinsic rewards were low no difference in cohesion was expected as a function of pay condition. This prediction was not supported by the analysis of action commitment data. Moreover, the analysis of attitudinal data suggested that these variables only interact for leaders in failing groups. Furthermore, these results suggest that under both conditions of intrinsic interest the effects of pay condition were not as expected (see Tables 1, 2, 3, 8 and 9).

CHAPTER IV

DISCUSSION

The focus of this study was on determinants of cohesion in task-oriented groups. Within this context the research was designed specifically to provide an answer to the following question: Are the four variables examined in this study (in addition to role) determinants of group cohesion, and, if so, how do they interact? This chapter presents a general discussion of the results of the study which have a bearing on our understanding of group cohesion.

The Nature of the Variable

In general, the results of this study tend to indicate that the four variables examined (in addition to role) can be considered determinants of cohesion in task-oriented groups. However, before considering the implications of the results for the concept of group cohesion, it seems reasonable to raise a few points concerning the class of variables each of the factors examined represents. The reader should recall that in the introduction to this dissertation it was postulated that variables representing pure group properties, the environmental, and the individual classes of variables could all

be determinants of cohesion. In this study we endeavoured to represent each of these classes of variables with at least one factor. Therefore, a brief discussion of each of these classes and how the variables used in this study were seen as representing those classes should aid in our understanding of the complex nature of group cohesion.

The Environmental Class

Within the context of group dynamics the term environment refers to all social phenomena which act from outside the group upon the group. Therefore, environmental factors are those which act upon the group from without and influence its structure or its behavior. In this sense, then, both the success-failure variable and the pay condition variable are environmental factors.

Although success and failure can be viewed as critical elements of behavior as social exchange--in the sense that they are outcomes which can be evaluated very directly in terms of rewards and costs--in this study they also represent an element of the environment. Several authors (e.g. Collins and Guetzhow, 1964; Roby, 1968; Shaw, 1971) have argued that the demands of the task constitute one aspect of the groups environment. The reader should recall that within the present situation it was the requirements of the task that dictated success and failure and not the subjects ability. In this

sense, then, the outcome of success or failure more clearly represents an environmental factor.

The amount and timing of pay was clearly controlled by a source from outside the group. In this sense, pay condition was also an environmental factor. Another aspect of the pay condition variable is that the timing of it either emphasized or de-emphasized the relationship between work and monetary rewards. When pay was contingent rewards were either given or withheld immediately following the performance, thus establishing a strong relationship between the two. When pay was not contingent, rewards were unceremoniously given before any performance, thus de-emphasizing the relationship between the two.

The Group Class

Group properties refer to the phenomena which arise when a collection of individuals has become, for whatever reason, sufficiently interdependent to be called a group. Factors included in this panel of variables include such attributes as structure, solidarity, organization, a system of values and norms, group goals, and so forth. The concept of structure refers to the pattern of relationships among members of a group which may be differentiated along a variety of dimensions (e.g. sociometric, communication, role, etc.). Since the manipulation of participation opportunity determined the

pattern of participation among group members, it may be considered to primarily represent a group property involving structure.

The Individual Class

Individual variables refer to the personal characteristics that group members bring to the group. Intrinsic interest in performing the task is purely an individual characteristic. In this sense the manipulation of intrinsic rewards represents the individual class of variables.

The Complex Nature of Cohesion

The results reported in the previous chapter suggest that success-failure and participation opportunity may be considered as primary antecedents of cohesion in the group setting examined in the present research, since very strong main effects on these variables were obtained. On the other hand, it seems that intrinsic rewards and pay condition may be considered as secondary or modifying antecedents of cohesion since they only had an effect on cohesion when they were combined with the other variables examined in this study.

However, there are at least two possible alternative explanations for these findings. The strong effects of success and participation as well as the relatively weak effects of intrinsic rewards and pay condition may be directly attributable to the strength of the

manipulations. It should be recalled that the differences on the "success" item used to check the manipulation of this variable were quite large. Thus, success was the best manipulated variable of the study. The differences on the participation item used to check the success of manipulating this variable were also substantially large, thus qualify participation as the second best manipulation of the study. For intrinsic interest the difference on the manipulation check was much smaller than on the previous two manipulation checks. Therefore it is possible that success and participation appear to be such primary determinants of cohesion only because in this study they were the most successfully manipulated.

Another explanation of the effects of success on cohesion might be that college students are extremely sensitive to the difference between success and failure. This explanation gains particular support when the difference between the success and failure conditions are considered. In the success condition there were three success. In the failing condition there was one success followed by two failures.

Finally, regarding intrinsic interest, it is possible that the instrument and method used for selecting subjects did not make a clear enough discrimination between high and low interested subjects. It is also possible that the task became intrinsicly interesting to those low interest subjects after the session began thus eliminating the self reported difference and concomitantly affecting those subjects responses to the cohesion measures.

More important, however, is that these results also suggest that the level of cohesiveness of a task-oriented group is a function of a complicated and extensive set of variables. The interrelationship among some of these variables is suggested by the several interactions obtained.

At the subjective perception level, the four-way interaction involving intrinsic rewards, pay condition, success-failure, and role, indicates that the individual variable of intrinsic rewards modifies the relationship between success-failure and pay condition, and the environmental variable of success-failure modifies the relationship between intrinsic rewards and pay condition for leaders but not for followers.

First, considering the pay condition and success-failure relationship, it seems that for leaders receiving high intrinsic rewards and contingent pay the results are in a direction predicted by exchange theory; however, the difference between success and failure is not significant. Contingent pay emphasizes the relationship between performance and monetary rewards and apparently this situation serves to increase the leader's desire to control the situation which seems to override his response to failure. It appears that the effects of failure are not as strong as would be expected when the leader has the desire to control the situation (perhaps he feels he can improve the outcomes from his position of control). If the leader changes groups he may not be the leader in the next group, therefore he chooses to remain in his present group.

When monetary rewards are not contingent, the control issue does not seem to be important and emphasis is placed on the rewards derivable from performing the task. When failure occurs in this situation it apparently diminishes the positive effects of intrinsic rewards, thus generating less of a desire to work with the same group in future sessions.

For leaders receiving low intrinsic rewards for performing the task it can be assumed that the only rewards derivable from the situation are monetary ones. In this case the relationship between pay condition and success-failure are exactly as expected based on exchange theory. When the relationship between performance and monetary rewards is emphasized by contingent pay, failure leads to a strong desire to work with a different group in future sessions. However, when monetary rewards are secure--in the noncontingent pay condition--success and failure do not differentially affect the desire to continue to work with the same group.

For followers at the subjective perception level, this same interaction indicates that the relationship between pay condition and success-failure is not mediated by level of intrinsic rewards, and the relationship between the two variables is exactly as expected. The same holds true at the behavioral level for both leaders and followers.

Now, considering the relationship between pay condition and intrinsic interest for leaders at the subjective perception level, it seems that for leaders in successful groups the two factors do not

combine to affect group cohesion differentially. However, in failing groups those leaders who receive high intrinsic rewards want to work with the same group much more often when pay is contingent than when it is noncontingent. Again the critical issue seems to be pay condition; when the relationship between performance and monetary reward is emphasized high intrinsic leaders seem to have a strong desire to control the situation which overrides their response to failure. However, when the emphasis is placed on the intrinsic rewards derivable from performance, failure seems to diminish the positive effects of this reward and to contribute to a desire not to work with the same group again.

When the level of intrinsic rewards received from performing the task is low, leaders apparently place great emphasis on pay. Under these circumstances it is not surprising that leaders who receive contingent pay are less cohesive than leaders who receive noncontingent pay. Those leaders receiving contingent pay earned considerably less money because their group failed, so there is every reason to change groups. They probably reasoned that they would not do any worse and would stand a better chance of earning more money. In the noncontingent pay condition, maximum earnings are secure so there is no reason to change groups.

The complex nature of cohesion is indicated further by the interaction between a structural and an individual variable. These results indicate that the effects of participation opportunity on cohesion are modified by the level of intrinsic rewards a group

member receives. When intrinsic rewards are high those groups which have the greatest participation opportunity are also the most cohesive. However, when intrinsic rewards are low participation opportunity does not differentially affect group cohesion. Clearly, then, participation opportunity is a concern only when there is some degree of intrinsic rewards derivable from performing the task; otherwise participation opportunity does not seem to matter. In fact there is evidence (see Appendix C; Tables 23, 24 & 28) to support the argument that group members who receive low intrinsic rewards evidence a strong tendency to be more satisfied with the organization of the group, with membership in the group, and their role in the group, when the structural demands of the group restrict participation opportunity.

A final note on the complexity of cohesion is suggested by the interaction of a structural and an environmental variable. An unexpected finding was that success-failure seemed to modify the effects of participation opportunity on cohesion. When groups were successful, level of participation opportunity did not differentially affect cohesion. However, when groups were failing those whose structure allowed high participation opportunity were more cohesive than those whose structure did not. Apparently group members feel that if they have an opportunity to influence the group there is a better chance that outcomes can be improved.

Concluding Remarks

Two general conclusions can be drawn from this study. First, as discussed in more detail below, the factors of pay condition and intrinsic rewards seem to have a slightly different effect on leaders than on followers. Second, if a group is succeeding, the variables examined in this study have very little effect on the cohesiveness of a task-oriented group. Apparently, when a group is successful many of the negative aspects of group membership become at least tolerable.

However, beyond these general conclusions, the results of this research have some additional theoretical implications. The reader should recall that earlier the assertion was advanced that factors representing the pure group property, the environmental and the individual class of variables would combine in complex interrelationships to determine group cohesion. The results of this study offer support for this hypothesis. Variables representing each of these classes worked together to determine cohesion in the groups tested. The implications of this are clear; researchers in the area of group cohesion should take a broader view of the problem which would include variables from all three classes, thus leading to a better, more realistic understanding of the phenomenon.

It seems important to note that the distinction between types of groups made in this study also seems to have theoretical importance. In the context of exchange theory (Thibaut & Kelley, 1959) it was assumed that the primary basis for a member's comparison level

would be differentially affected by the type of group in which he is a member. Groups which are low on task orientation are likely to be composed of members who place greater emphasis on those factors which they perceive as contributing to an increase in interpersonal attraction. In this situation it could be expected that the individual class of variables would be most important in determining group cohesion. However, to the extent a group is primarily task-oriented, its members can be expected to place more weight on those factors that contribute to task completion (e.g., success versus failure), while placing less emphasis on those factors that contribute to interpersonal attraction. In this situation group members should be more concerned with variables representing the pure group property and environmental class of variables. While this study did not directly test this assumption, it does indicate that the individual variable examined in this study (i.e., intrinsic task interest) played a secondary role in determining cohesion, while a structural variable (i.e. participation opportunity) and an environmental variable (i.e., success-failure) played a major role. Thus, it seems reasonable to conclude--at least tentatively--that variables arising from the group itself and its environment may be the most important determinants of cohesion in predominately task-oriented groups. Certainly this question deserves further study.

If the above conclusions are valid, then it should be clear that before further research is conducted in this area a comprehensive listing of the variables included in each of the three classes

should be developed and used as a basis for conducting research on determinants of cohesion in task-oriented groups. However, this undertaking may not be as simple as it appears. For example, consider that a group's goal can be an environmental factor--if it is imposed on the group from an outside source such as the larger organization of which the group is a part--or it could be a purely group property arrived at through the consensus of its members, or it could be both. Another example of this is intergroup competition which could be group initiated or other initiated. In this context it would be important to determine whether the effects of overlapping factors are different when they represent different classes of variables.

In light of the preceding discussion future research should be concerned with the determinants of cohesion as they affect leaders and followers separately. For example, leaders responded differentially to pay condition more than did followers. It could be that when the performance and monetary reward relationship is emphasized by contingent pay, leaders feel a greater pressure for high quality performance and a concomitant responsibility for the groups performance which decreases their desire to remain in that tension provoking situation. On the other hand, followers may project this pressure and responsibility onto the leader, thus relieving themselves of the tension. Furthermore, this study did not generate any data which would explain why level of intrinsic rewards mediated the relationship between success-failure and pay condition for

leaders but not for followers. Perhaps the differing amount of responsibility for the group's outcome that the leader chose to accept was a function of intrinsic rewards. Moreover, this study does not explain why leaders are so susceptible to the effects of the interaction between pay condition and intrinsic rewards while followers are not. Obviously, these are questions that can best be answered through further empirical study.

Future research should also be concerned with the investigation of cohesion as a dependent variable in failing groups. The results of the present study tend to indicate that it is under this failing condition that group members are most likely to subject their involvement to the most serious scrutiny. It follows, therefore, that it is under this condition that cohesion as a dependent variable may best be studied.

As a final note, the discrepancy between attitudinal data and behavioral data should be considered. Group members seem to indicate a more complex pattern of responses on attitudinal data than on behavioral data. There are any number of possible explanations for this ranging from the personal to the situational. However, what seems most applicable here is that the attitudinal measure used in this study tapped subjects' judgements and feelings at a particular moment in time which potentially involved any number of competing motives and retrospective evaluations of unstable intensity. On the other hand the action commitment measure had implications for the subjects' future well-being which in all probability led them to

consider more seriously and thoughtfully their proposed action. Thus, the possibility that group members would choose to remain in the group while not being committed to behavior which would contribute to the group's well being was left open to investigation. Therefore, a reasonable first step in the investigation of this possibility is the development of in-group process measures which would both provide a means of more thoroughly examining group cohesion and contribute to a more comprehensive understanding of the phenomena.

In conclusion, it should be added that the factors examined in this study have been subjected to separate investigation in past research. However, the findings of this investigation tend to indicate that the study of group cohesion has now developed to a point where such less complicated designs are not likely to yield a great amount of new knowledge. It is proposed then that laboratory studies can best simulate the rich complexity of the natural setting within the conceptual framework provided by the general systems theory model, and that this is the direction in which the study of group process variables should be moving.

APPENDICES

APPENDIX A

Materials

Subject Contact Form

List of Objects

Member Reaction Questionnaire

Group Transfer Form

Task Reaction Form

Recorder's Name: _____
Date: _____
Time: _____

Subject Contact Form

(1) Subject's Name: _____

(2) Phone Number: _____

(3) My name is _____ and I am a research assistant working on a special project based in the Department of Psychology. Your name was selected from a list of students who indicated that they are available to participate in psychological research for pay. The reason I called is to find out if you still are interested in participating in a research project for pay.

Yes _____ No _____

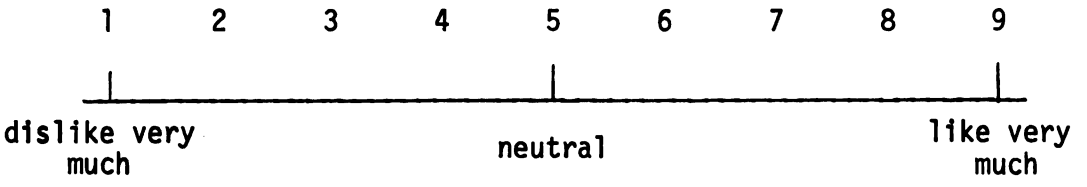
(4) As we plan it now this research will require you to participate in three separate one hour sessions arranged at your convenience. Can you do this?

Yes _____ No _____

(5) For the first session of the project we need people who differ as to how much they like to play word games. So, first I need to know, do you like to play word games?

Yes _____ No _____

(6) Now will you please give me a rating of how much you like word games on a scale from 1 to 9, with 9 being "like to play very much, 1 being dislike very much, and 5 being neutral."



(7) Now will you please give me the time and days of the week which are most convenient for you. If at all possible your preference will be worked into our research schedule. (X-out convenient times.)

	Day							Evening	
	10-11	11-12	12-1	1-2	2-3	3-4	4-5	7-8	8-9
M									
T									
W									
Th									
F									
Sat									

(8) Thank you very much for your time. You will be contacted by telephone within 10 days to confirm the time, date and place of the first session you will be participating in.

Possible Questions & Answers

1. What is the research about?

   "I'm sorry, I can't tell you the exact nature of the research. But I can tell that it does not involve any discomfort in any way, and that you will probably find it rewarding.

2. How much money will I earn?

   "I'm sorry, I can't tell you the exact amount you will earn, but you will definitely be reasonably compensated (new minimum wage) for doing this job for us."

Moderately Easy Items

Animal	Mineral	Vegetable
Bee	Car	Tree
Nixon	Lamp	Flower
		Desk

Difficult Items

Animal	Mineral	Vegetable
Cowhide	Sparty (the statue)	The Bible
Buddah	The Sun	A Cigarette
The Brain		Wooden Ruler

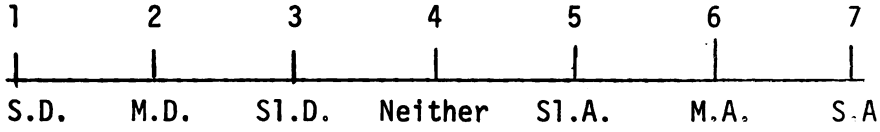
Member Reaction Questionnaire

Directions: We are interested in your reactions to being a member of this group. Please read each question carefully and rate your reaction on the scales by placing a check on the line below each question.

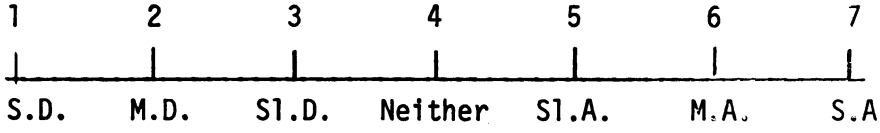
On this questionnaire the response alternatives are as follows:

1. - Strongly disagree
2. - Moderately disagree
3. - Slightly disagree
4. - Neither agree nor disagree
5. - Slightly agree
6. - Moderately agree
7. - Strongly agree

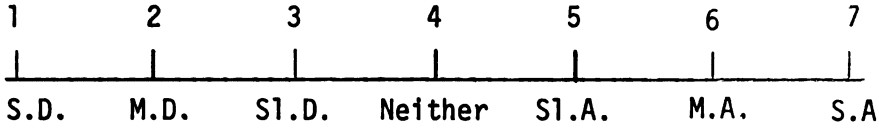
* 1. I enjoyed the task this group performed during this session.



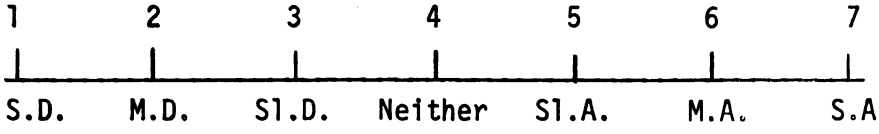
* 2. I felt a real sense of involvement with the group.



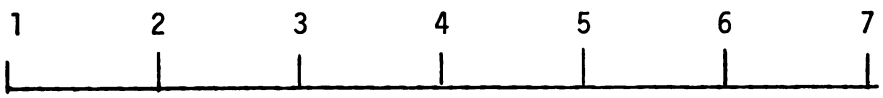
* 3. If I were taking part in another group experiment, I would like to work with this same group.



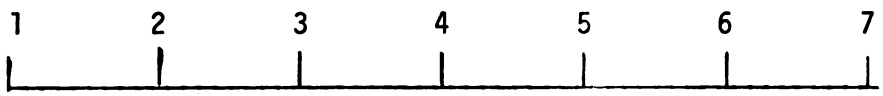
4. I felt that this group was successful in performing the task presented to us in this session.



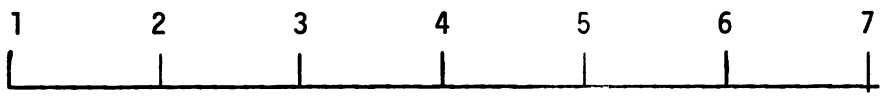
5. I felt restricted from expressing my opinion during this group session.



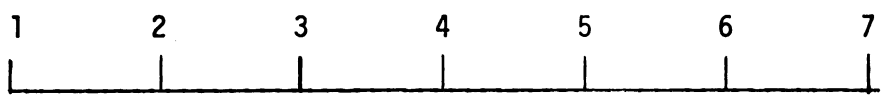
6. This group made the best use of its time solving the task.



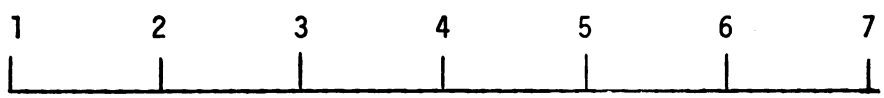
* 7. I was quite satisfied with being a member of this group.



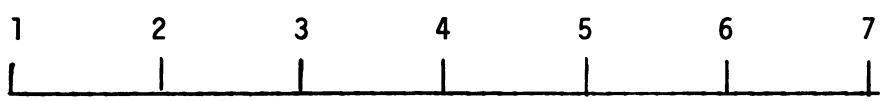
* 8. On a whole I was satisfied with this group's performance in this session.



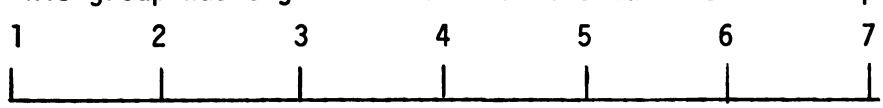
9. My group was creative on this task.



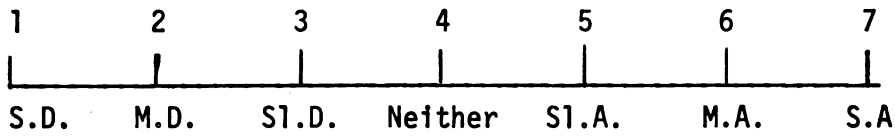
* 10. The atmosphere of this group was quite friendly.



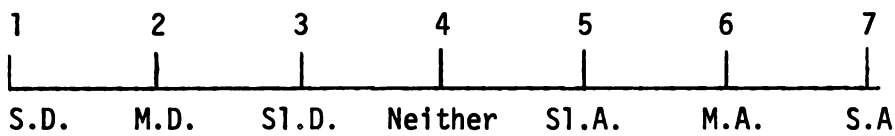
* 11. This group was organized well for the task we were to perform.



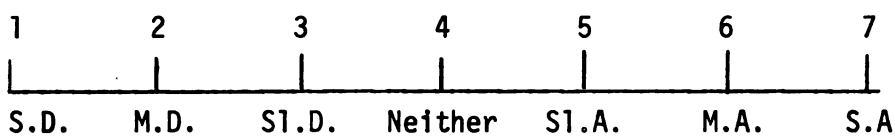
12. I think my group developed a high quality solution to this task.



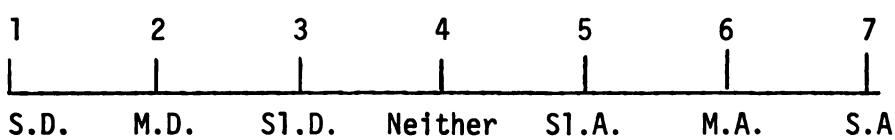
13. On the whole I was satisfied with my performance in this group.



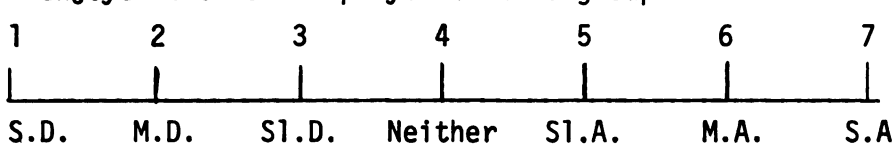
14. I felt tense and uncomfortable in this group.



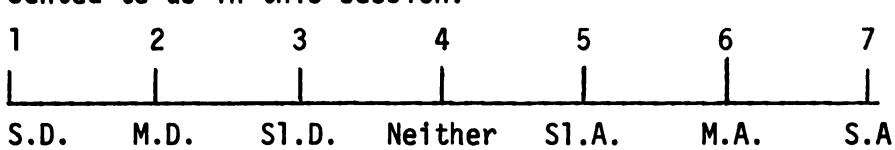
15. There was much disagreement among the members of the group.



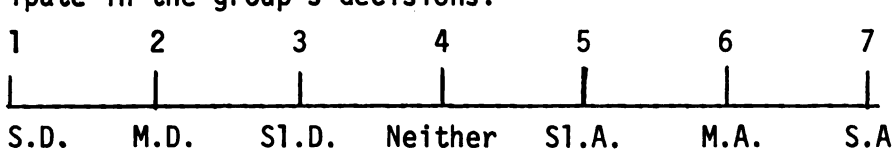
* 16. I enjoyed the role I played in this group.



* 17. I felt this group was successful in solving the problems presented to us in this session.



* 18. I felt restricted in the amount of my opportunity to participate in the group's decisions.



Group Transfer Form

As you know this study involves a large number of people, each participating in a group. Some people have not been at all happy with their groups. Many of those who have indicated a desire to participate in other sessions of this study have also requested that they be changed to another group where they might get along better with the other members. In these situations we have accomodated them. As a result of these changes there are other group situations available for subsequent sessions and what we'd like to know is:

1. Would you like to participate again?

   Yes _____ No _____

2. Would you like to change groups?

   Yes _____ No _____

3. Who would you like to be with in the next group?

   Person: A _____

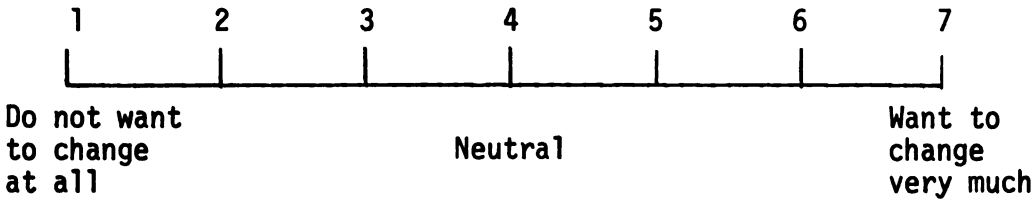
   B _____

   C _____

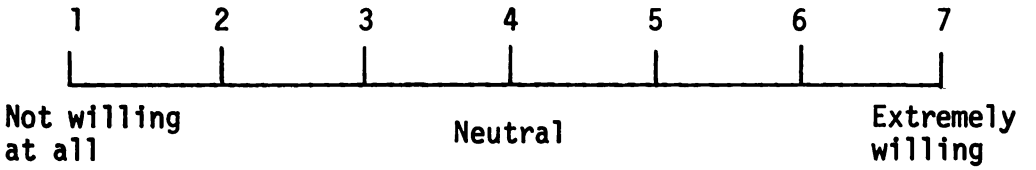
Task Reaction Form

A number of people have indicated that they do not find the task involved in this session very satisfying. We are considering creating some situations with a different task. What we'd like to know is:

1. How much you'd like to change tasks.



2. If it meant changing groups, how willing would you be to do this?



APPENDIX B

Instructions

Experimenter Report Form

INSTRUCTIONS

In this session you are to try to guess the identity of an object which I will initially define as animal, vegetable, or mineral. Anything from the animal kingdom will be considered animal, anything from the plant kingdom will be considered vegetable, and anything that is not now nor has ever been living will be considered mineral. For example a shoe would be considered animal since it is made from an animal hide, George Washington would be classified as animal since he is a member of the species in the animal kingdom called Homo sapiens, a telephone pole would be classified as vegetable since it is made of wood which comes from a tree, and a sewing machine would be classified as mineral since it is made from inorganic metals.

Since this information alone would prove insufficient for you to guess the identity of the object, you will be allowed to ask me a series of questions which should enable you to narrow down the range of possible answers and eventually come up with the correct solution. In this study, the number of allowable questions you may ask me is twenty (20). You must phrase them in such a way that they can be answered either "yes," "no," "partly," "sometimes," or "not in the usual sense of the word." If any of your questions are unclear or cannot be responded to in one of these ways, you will be asked to restate those questions. You will be allowed time for discussion on every question, and it is necessary to reach consensus.

In order to simulate the organization of a typical work group we have randomly assigned person _____as the leader in this group and all questions directed to me must be asked by this person. However, all of you are encouraged to freely participate in every aspect of the discussion and volunteer your ideas to the leader as they occur to you. At no time should the leader ask me a question without first reaching unanimous agreement with the rest of the group.

Each game will end when either you have correctly identified the object, when you have used up, without success, all of the twenty questions allowed you, or when 15 minutes are up. For each game, both the number of questions you ask before finding the solution and the total elapsed time will be recorded by me. You will be playing three (3) of these games at this experimental session. Two more sessions will be scheduled in the near future.

So your goal in this session is to work as a group and correctly identify all three objects you will be presented by using the twenty questions procedure. But remember only the leader can ask me the question, however, all of you are encouraged to freely volunteer your ideas in reaching unanimous agreement on each question directed to me. Now, before we go any further, are there any questions.

INSTRUCTIONS

In this session you are to try to guess the identity of an object which I will initially define as animal, vegetable, or mineral. Anything from the animal kingdom will be considered animal, anything from the plant kingdom will be considered vegetable, and anything that is not now nor has ever been living will be considered mineral. For example a shoe would be considered animal since it is made from an animal hide, George Washington would be classified as animal since he is a member of the species in the animal kingdom called Homo sapiens, a telephone pole would be classified as vegetable since it is made of wood which comes from a tree, and a sewing machine would be classified as mineral since it is made from inorganic metals.

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In order to simulate the organization of a typical work group we have randomly assigned person _____ as the leader in this group and all questions directed to me must be asked by this person. To facilitate the groups process the leader is to view the rest of the group as "potential resource" persons to be conferred with only as he needs more information and in all cases the leader will always make the final decision as to what question to ask me. So this means that the rest of you cannot volunteer any information to the leader or me but rather you must wait for the leader to ask you for your input. And finally, to further facilitate the groups process the leader must ask every other question without discussing it with the rest of the group.

Each game will end when either you have correctly identified the object, when you have used up, without success, all of the twenty questions allowed you, or when 15 minutes are up. For each game, both the number of questions you ask before finding the solution and the total elapsed time will be recorded by me. You will be playing three (3) of these games at this experimental session. Two more sessions will be scheduled in the near future.

So your goal in this session is to work as a group and correctly identify all three objects you will be presented by using the twenty questions procedure. But remember, only the leader can ask me the questions and he must ask every other question without consultation, the rest of the group cannot volunteer any information and the leader always has the final decision as to what question to ask me. Now, before we go any further, are there any questions?

INSTRUCTIONS

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Each game will end when either you have correctly identified the object, when you have used up, without success, all of the twenty questions allowed you, or when 15 minutes are up. For each game, both the number of questions you ask before finding the solution and the total elapsed time will be recorded by me. Each of you will earn $3.00* for every object you correctly identify. You will be playing three (3) of these games at this experimental session. Two more sessions will be scheduled in the near future.

So your goal in this session is to work as a group and correctly identify all three objects you will be presented by using the twenty questions procedure. But remember only the leader can ask me the question, however, all of you are encouraged to freely volunteer your ideas in reaching unanimous agreement on each question directed to me. Now, before we go any further, are there any questions.

*Failure--$3.00 for every correct answer

INSTRUCTIONS

In this session you are to try to guess the identity of an object which I will initially define as animal, vegetable, or mineral. Anything from the animal kingdom will be considered animal, anything from the plant kingdom will be considered vegetable, and anything that is not now nor has ever been living will be considered mineral. For example a shoe would be considered animal since it is made from an animal hide, George Washington would be classified as animal since he is a member of the species in the animal kingdom called Homo sapiens, a telephone pole would be classified as vegetable since it is made of wood which comes from a tree, and a sewing machine would be classified as mineral since it is made from inorganic metals.

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In order to simulate the organization of a typical work group we have randomly assigned person _____ as the leader in this group and all questions directed to me must be asked by this person. To facilitate the groups process the leader is to view the rest of the group as "potential resource" persons to be conferred with only as he needs more information and in all cases the leader will always make the final decision as to what question to ask me. So this means that the rest of you cannot volunteer any information to the leader or me but rather you must wait for the leader to ask you for your input. And finally, to further facilitate the groups process the leader must ask every other question without discussing it with the rest of the group.

Each game will end when either you have correctly identified the object, when you have used up, without success, all of the twenty questions allowed you, or when 15 minutes are up. For each game, both the number of questions you ask before finding the solution and the total elapsed time will be recorded by me. Each of you will earn $1.00* for every object you correctly identify. You will be playing three (3) of these games at this experimental session. Two more sessions will be scheduled in the near future.

So your goal in this session is to work as a group and correctly identify all three objects you will be presented by using the twenty questions procedure. But remember only the leader can ask me the questions and he must ask every other question without consultation, the rest of the group cannot volunteer any information and

the leader always has the final decision as to what question to ask me. Now, before we go any further, are there any questions.

*Success--$1.00 for every correct answer

Experimenter Report Form

Date:_____

Your Name: _____

Group Number:_____

Time Started Session: _____

Time Ended Session: _____

Was reimbursement voucher signed? Yes_____ No_____

Game I: time started_____ time ended_____

1. Object for this game: _____

2. Question number (place a check on appropriate line after each question is asked):

   #1_____ 2_____ 3_____ 4_____ 5_____ 6_____ 7_____ 8_____ 9_____

   10_____11_____12_____13_____14_____15_____16_____17_____18_____

   19_____20_____

3. Did the leader ask for or receive advice from the rest of the group? (Place a check on the line following the question number for yes and leave it blank for no. Remember that in the low participation condition only every other question should be checked.)

   #1_____ 2_____ 3_____ 4_____ 5_____ 6_____ 7_____ 8_____ 9_____

   10_____11_____12_____13_____14_____15_____16_____17_____18_____

   19_____20_____

Game II

1. Object for this game: _____

2. Question Number: #1_____ 2_____ 3_____ 4_____ 5_____ 6_____

   7_____ 8_____ 9_____ 10_____ 11_____ 12_____ 13_____ 14_____

   15_____16_____17_____ 18_____ 19_____ 20_____

3. Did the leader ask for or receive advice from the rest of the group?

   #1_____ 2_____ 3_____ 4_____ 5_____ 6_____ 7_____ 8_____ 9_____

   10_____11_____12_____13_____14_____15_____16_____17_____18_____

   19_____20_____

Game III

1. Object for this game: _____

2. Question Number: #1_____ 2_____ 3_____ 4_____ 5_____ 6_____

   7_____ 8_____ 9_____10_____11_____12_____13_____14_____15_____

   16_____17_____18_____19_____20_____

3. Did the leader ask for or receive advice from the rest of the group?

   #1_____ 2_____ 3_____ 4_____ 5_____ 6_____ 7_____ 8_____ 9_____

   10_____11_____12_____13_____14_____15_____16_____17_____18_____

   19_____20_____

Is there anything about the group which might eliminate them from the analysis?_____

_____

_____

_____

Were there any questions you could not answer? What were they?

_____

_____

_____

_____

APPENDIX C

Relevant Unpredicted Findings

Relevant Unpredicted Findings

Findings relevant to the satisfaction and evaluation measures are reported in this Appendix. The particular items of interest are: Membership satisfaction, task satisfaction, role satisfaction, satisfaction with the group's performance, satisfaction with the group's organization (structure), evaluation of the group's atmosphere, and the perception of participation opportunity and the group's success. Since no behavioral data relevant to these measures were collected, all the results presented in this appendix were derived from the Member Reaction Questionnaire. The reader should recall that these data were subjected to a multivariate analysis of variance and the obtained F ratio were used as a guide to further univariate tests. Table 15 presents all the F values derived from the multivariate analysis of variance performed on these data. When a multivariate F ratio was significant at the .05 level, appropriate univariate tests were performed, and the resultant F ratios were considered significant when they surpassed the .006 level (i.e., .05/9, since there were nine scales of interest). To conserve space the individual significant multivariate F's will not be referred to in the text of this report. Therefore, when a univariate F test is reported it can be assumed that the multivariate F was significant, and Table 15 can be referred to for verification.

Table 15.--Summary of F-Ratios for Multivariate Test of Equality of Mean Vectors.

Source		df	F	p
Intrinsic Interest	(A)	10	2.95	.0005
Pay Condition	(B)	10	6.25	.0001
Success-Failure	(C)	10	71.59	.0001
Participation Opportunity	(D)	10	26.63	.0001
A X B		10	2.66	.0102
A X C		10	1.73	NS
A X D		10	8.43	.0001
B X C		10	4.12	.0003
B X D		10	3.43	.0016
C X D		10	1.66	NS
A X B X C		10	4.05	.0004
A X B X D		10	0.88	NS
A X C X D		10	2.99	.0045
B X C X D		10	3.91	.0005
A X B X C X D		10	2.94	.0051
Error I		55	--	--
Role (E)		10	39.48	.0001
A X E		10	5.23	.0001
B X E		10	3.15	.0030
C X E		10	2.59	.0119
D X E		10	23.99	.0001
A X B X E		10	2.54	.0136
A X C X E		10	2.65	.0104
A X D X E		10	3.38	.0018
B X C X E		10	3.99	.0004
B X D X E		10	5.40	.0001
C X D X E		10	3.58	.0010
A X B X C X E		10	3.36	.0018
A X B X D X E		10	5.07	.0001
A X C X D X E		10	1.30	NS
B X C X D X E		10	3.13	.0032
A X B X C X D X E		10	2.19	.0323
Error II		55	--	--

Findings Common to Followers and Leaders

Task Satisfaction.--The univariate analysis of the task satisfaction item yielded a significant intrinsic interest x pay condition x success-failure interaction. Table 16 presents the means

Table 16.--Mean Questionnaire Responses Relevant to the Intrinsic Interest x Pay Condition x Success-Failure Interaction on Task Satisfaction.

	Success		Failure	
	High Intrinsic	Low Intrinsic	High Intrinsic	Low Intrinsic
Contingent Pay	2.95	4.48	4.50	3.83
Non Contingent Pay	2.90	3.50	3.75	5.18

relevant to this interaction. A subsequent analysis of these means reveals that under success the intrinsic interest x pay condition interaction did not reach significance ($F = 2.24$). However, when groups failed the intrinsic interest x pay condition interaction was significant ($F = 10.71$, $p < .01$). Further, tests of simple effects indicated that when intrinsic interest was high there was a marginally significant difference ($F = 2.87$, $p < .10$) between the pay conditions, with subjects receiving contingent pay expressing a greater

willingness to change tasks than subjects who did not receive contingent pay. When intrinsic interest was low, there also was a significant difference ($F = 9.30$, $p < .005$) between pay conditions which, however, reflected a reversal of the effect found under high interest. Low intrinsic subjects who did not receive contingent pay expressed a greater willingness to change tasks than did subjects who received contingent pay.

An intrinsic interest x success-failure x participation opportunity interaction also was obtained from the univariate analysis of the task satisfaction item. Table 17 presents the means relevant

Table 17.--Mean Questionnaire Responses Relevant to the Intrinsic Interest x Success-Failure x Participation Opportunity Interaction on Task Satisfaction.

	Success		Failure	
	High Intrinsic	Low Intrinsic	High Intrinsic	Low Intrinsic
High Participation Opportunity	3.03	3.80	3.38	4.80
Low Participation Opportunity	2.83	4.18	4.83	4.10

to this interaction. A test of simple effects performed on these means revealed that when groups were successful the intrinsic interest x participation opportunity interaction was not significant.

However, when groups failed the intrinsic interest x participation opportunity interaction did reach significance (F = 11.73, p < .001). Further exploration of this interaction through tests of simple effects indicated that when intrinsic interest was high, there was a significant difference (F = 10.71, p < .005) between levels of participation opportunity, with those experiencing the greatest opportunity expressing the least amount of willingness to change the task. There was no difference on task satisfaction as a function of participation opportunity when intrinsic interest was low.

Participation Opportunity.--Results tended to indicate that participation opportunity was an important antecedent of cohesion in task-oriented groups. An important question raised by these findings is: Do any of the factors manipulated in this study have an effect on the perception of participation opportunity? Data which examine this question are presented below.

The univariate analysis of the participation opportunity item yielded several significant interactions. The first finding relevant to the question raised above was the obtained intrinsic interest x success-failure x participation opportunity interaction. Table 18 presents the means relevant to this effect. A test of simple effects performed on these data indicated that when groups were successful, an intrinsic interest by participation opportunity interaction did not occur; rather, the simple main effect for intrinsic interest was significant (F = 151.52). Subjects who possessed high intrinsic interest. On the other hand, when groups failed the intrinsic

Table 18.--Mean Questionnaire Responses Relevant to the Intrinsic Interest x Success-Failure x Participation Opportunity Interaction on Participation Opportunity.

	Success		Failure	
	High Part. Opp.	Low Part. Opp.	High Part. Opp.	Low Part. Opp.
High Intrinsic	6.60	6.65	6.38	3.95
Low Intrinsic	4.28	4.50	5.28	4.50

interest x participation opportunity interaction was significant (F = 20.30, p < .001). A test of simple effects on this interaction revealed that subjects in failing groups with high participation opportunity felt that their opportunity was significantly greater (F = 18.18, p < .001) when they also had high intrinsic interest in the task than when their intrinsic interest was low. There was no difference in the perception of participation opportunity as a function of intrinsic interest when participation opportunity was low.

Examination of the significant pay condition x success-failure interaction (F = 11.96, p < .001) revealed that when pay was contingent, outcome differentially affected the perception of participation opportunity. Table 19 presents the means relevant to this interaction. Inspection of this table shows that when pay is contingent, failure led to the perception of significantly less participation opportunity (F = 38.79, p < .001) than did success. When pay

Table 19.--Mean Questionnaire Responses Relevant to the Pay Condition x Success-Failure Interaction on Participation Opportunity.

	Contingent Pay	Noncontingent Pay
Success	6.63	4.39
Failure	5.83	4.23

was not contingent, outcome did not differentially affect the perception of participation opportunity.

Table 20 presents the means relevant to the significant participation opportunity x pay condition interaction. A test of

Table 20.--Mean Questionnaire Responses Relevant to the Pay Condition x Participation Opportunity Interaction on Participation Opportunity.

	High Participation Opportunity	Low Participation Opportunity
Contingent Pay	5.78	4.43
Non Contingent Pay	6.78	4.19

simple effects performed on these means reveals that when participation opportunity actually was high, pay condition had an effect on

the perception of participation opportunity. Contingent pay seemed to modify the perception of participation opportunity such that it was seen as being significantly lower (F = 48.48, p < .001) than when pay was not contingent. When manipulated participation opportunity was low, pay condition did not differentially affect the perception of participation opportunity.

Membership Satisfaction.--A univariate test of the membership satisfaction item yielded a significant (F = 10.88, p < .001) intrinsic interest x participation opportunity x role interaction. Table 21 presents the means relevant to this effect. A test of simple

Table 21.--Mean Questionnaire Responses Relevant to the Intrinsic Interest x Participation Opportunity x Role Interaction on Membership Satisfaction.

	Leaders		Followers	
	High Intrinsic	Low Intrinsic	High Intrinsic	Low Intrinsic
High Participation Opportunity	5.90	5.55	6.13	5.08
Low Participation Opportunity	5.55	6.55	4.43	6.03

effects performed on these data revealed that for leaders, the intrinsic interest x participation opportunity interaction was significant (F = 13.97, p < .001). Further tests indicated that leaders

receiving high intrinsic rewards did not differ as a function of follower's participation opportunity. However, those leaders who received few intrinsic rewards were significantly (F = 15.56, p < .001) more satisfied with being a member of the group when followers had low participation opportunity than when they had high participation opportunity. For followers, the intrinsic interest x participation opportunity interaction also was significant (F = 55.87, p < .0001). Further, tests of simple effects revealed that followers receiving high intrinsic rewards were significantly more satisfied (F = 45.71, p < .001) when their participation opportunity was high than when it was low. However, when intrinsic rewards were low the opposite result was obtained; that is, followers were more satisfied (F = 14.29, p < .001) when their participation opportunity was restricted than when it is not.

Group Organization.--A univariate analysis performed on the group organization item yielded a significant (F = 18.23, p < .0001) intrinsic interest x participation opportunity interaction. Table 22 presents the means relevant to this interaction. A test of simple effects performed on these data revealed that groups expressing high intrinsic interest in the task were significantly more satisfied with the group's organization (F = 7.17, p < .01) when participation opportunity was high than when it is low. However, those groups expressing low intrinsic interest in the task were significantly (F = 10.57, p < .005) more satisfied with the group's organization when participation opportunity was low.

Table 22.--Mean Questionnaire Responses Relevant to the Intrinsic Interest x Participation Opportunity Interaction on Group Organization.

	High Intrinsic	Low Intrinsic
High Participation Opportunity	5.11	4.28
Low Participation Opportunity	4.48	5.03

Role Satisfaction.--The univariate analysis performed on the role satisfaction item yielded a significant (F = 13.06, p < .001) success-failure x role interaction. Table 23 presents the means

Table 23.--Mean Questionnaire Responses Relevant to the Success-Failure x Role Interaction on Role Satisfaction.

	Leaders	Followers
Success	6.23	5.81
Failure	5.63	4.21

relevant to this interaction. A test of simple effects revealed that leaders (F = 8.00, p < .01) and followers (F = 56.89, p < .0001) were significantly more satisfied with their roles when the group succeeded than when it failed, although the difference between success and failure was much greater for followers.

Findings Applicable Only to Followers

Atmosphere.--The univariate analysis of the atmosphere item derived from the questionnaire yielded a significant (F = 12.54, $p < .001$) intrinsic interest x role interaction. Table 24 presents

Table 24.--Mean Questionnaire Responses Relevant to the Intrinsic Interest x Role Interaction on Atmosphere.

	Followers	Leaders
High Intrinsic	6.23	6.18
Low Intrinsic	5.71	6.38

the means relevant to this interaction. Analysis of these data through tests of simple effects indicated that followers who expressed high intrinsic interest in the task perceived the atmosphere of their group to be significantly more friendly (F = 10.00, $p < .01$) than did those followers expressing low intrinsic interest in the task. Leaders did not perceive any difference in the friendliness of their groups atmosphere as a function of intrinsic interest.

Participation Opportunity.--Examination of the participation opportunity item through a univariate analysis of variance produced a significant (F = 11.35, $p < .001$) intrinsic interest x pay condition x participation opportunity x role interaction. Table 25 presents

Table 25.--Mean Questionnaire Responses Relevant to the Intrinsic Interest x Pay Condition x Participation Opportunity x Role Interaction on Participation Opportunity.

	Followers			
	Contingent Pay		Noncontingent Pay	
	High Part. Opp.	Low Part. Opp.	High Part. Opp.	Low Part. Opp.
High Intrinsic	6.40	2.05	6 65	2 10
Low Intrinsic	4.10	2.05	6.45	2.05
	Leaders			
	Contingent Pay		Noncontingent Pay	
	High Part. Opp.	Low Part. Opp.	High Part. Opp.	Low Part. Opp.
High Intrinsic	6.10	6.70	6.80	6.60
Low Intrinsic	6.50	6.90	6.80	7.00

the means relevant to this interaction. A test of simple effects performed on these data revealed that for leaders the 3-way interaction (or any of the lower order interactions or main effects) did not reach significance. However, for followers the 3-way interaction was significant ($F = 7.92$, $p < .01$). Further exploration of the data indicated that for followers intrinsic interest did not differentially affect the perception of participation opportunity in groups whose

members received contingent pay while experiencing low participation opportunity. However, for groups whose members received contingent pay and had high participation opportunity, level of intrinsic interest had an effect on perceived participation opportunity ($F = 7.31$, $p < .01$); when participation opportunity was high, followers who received contingent pay and who had low intrinsic interest in the task perceived themselves to have significantly less ($F = 36.67$, $p < .0001$) participation opportunity than did followers with high intrinsic interest in the task who received contingent pay. There was no intrinsic interest x participation opportunity interaction when pay was not contingent.

Role Satisfaction.--The univariate analysis of the role satisfaction item yielded a significant ($F = 9.44$, $p < .005$) intrinsic interest x participation opportunity x role interaction. Table 26 presents the means relevant to this interaction. A

Table 26.--Mean Questionnaire Responses Relevant to the Intrinsic Interest x Participation Opportunity x Role Interaction on Role Satisfaction.

	Followers		Leaders	
	High Intrinsic	Low Intrinsic	High Intrinsic	Low Intrinsic
High Participation Opportunity	5.78	4.90	5.70	5.90
Low Participation Opportunity	4.03	5.35	6.15	5.95

subsequent test of simple effects of these data revealed that for leaders the intrinsic interest x participation opportunity interaction was not significant. Leaders, seemed in general to be equally satisfied with their roles, irrespective of the level of their intrinsic interest or the level of participation opportunity of the followers. For followers, the intrinsic interest x participation opportunity interaction was significant ($F = 4.69$, $p < .05$). Further tests of simple effects revealed that followers receiving high intrinsic rewards were significantly more satisfied ($F = 31.50$, $p < .001$) when they also experienced high participation opportunity than when they experienced low participation opportunity. Followers receiving low intrinsic rewards expressed no difference in role satisfaction as a function of participation opportunity.

Satisfaction with the Group's Performance.--The univariate analysis performed on the group performance satisfaction item yielded significant ($F = 15.38$, $p < .001$) intrinsic interest x participation opportunity x role interaction. Table 27 presents the means relevant to this interaction. A test of simple effects on these data revealed that for leaders the intrinsic interest x participation opportunity interaction did not reach significance. However, for followers the intrinsic interest x participation opportunity interaction was significant ($F = 7.97$, $p < .01$). Further tests of the simple effects revealed that followers who expressed high intrinsic interest in the task were significantly ($F = 13.28$, $p < .001$) more satisfied with the performance of their group when they experienced high participation

Table 27.--Mean Questionnaire Responses Relevant to the Intrinsic Interest x Participation Opportunity x Role Interaction on Group Performance Satisfaction.

	Followers		Leaders	
	High Intrinsic	Low Intrinsic	High Intrinsic	Low Intrinsic
High Participation Opportunity	5.58	4.78	4.60	5.35
Low Participation Opportunity	4.28	4.90	5.00	5.10

opportunity than when they experienced low participation opportunity. For followers expressing low intrinsic interest in the task, there was no difference in their satisfaction with the group's performance as a function of participation opportunity.

Findings Applicable Only to Leaders

Task Satisfaction.--The univariate analysis performed on the task satisfaction item yielded a significant (F = 14.39, p < .001) pay condition x success-failure x role interaction. Table 28 presents the means relevant to this interaction. A subsequent test of simple effects revealed a significant (F = 18.80, p < .001) pay condition x success-failure interaction for leaders. Further, tests of

Table 28.--Mean Questionnaire Responses Relevant to the Pay Condition x Success-Failure x Role Interaction on Task Satisfaction.

	Leaders		Followers	
	Success	Failure	Success	Failure
Contingent Pay	4.10	4.05	3.33	4.18
Noncontingent Pay	2.25	4.65	3.85	4.23

simple effects indicated that leaders in successful groups responded differentially to pay condition, with those receiving noncontingent pay being significantly (F = 21.65, p < .0001) less willing to change task than those who received contingent pay. Leaders in failing groups reported no difference in task satisfaction as a function of pay condition. The pay condition x success-failure interaction was not significant for followers.

Membership Satisfaction.--A univariate analysis of the membership satisfaction item yielded a significant (F = 13.54, p < .001) pay condition x participation opportunity x role interaction. Table 29 presents the means relevant to this interaction. Examination of these data through tests of simple effects revealed that the pay condition x participation opportunity interaction does not reach significance for followers. However, a significant pay condition x participation opportunity interaction was obtained for leaders (F = 16.51, p < .001) for leaders. Subsequent tests of simple

Table 29.--Mean Questionnaire Responses Relevant to the Pay Condition x Participation Opportunity x Role Interaction on Membership Satisfaction.

	Leaders		Followers	
	Contingent Pay	Noncontingent Pay	Contingent Pay	Noncontingent Pay
High Participation Opportunity	5.45	6.00	5.85	5.48
Low Participation Opportunity	6.50	5.60	5.35	4.98

effects showed that leaders receiving contingent pay were significantly (F = 17.46, p < .001) more satisfied with being a member of their group when followers experienced low participation opportunity than when followers experienced high participation opportunity. When pay was not contingent, leaders reported no difference in membership satisfaction as a function of follower participation opportunity.

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